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ANTI-CRISIS POLICY UNDER PANDEMIC CONDITIONS IN GEORGIA

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АНТИКРИЗИСНАЯ ПОЛИТИКА В УСЛОВИЯХ ПАНДЕМИИ В ГРУЗИИ

Abstract. *The article reflects on forming the state anti-crisis policy in the conditions of COVID-pandemic in Georgia. Particular attention is paid to the balanced preventive measures taken ensuring the life and work conditions for the population.*
Keywords: *COVID pandemic; Prevention; Virtual meetings; distant (on-line) meetings; Anti-crisis management; Adaptation.*

Аннотация. *В статье рассмотрены вопросы формирования государственной антикризисной политики в условиях ковидпандемии в Грузии. Особое внимание уделяется сбалнсированности проведенных превентивных мер с обеспечением жизны и трудовой деятельности населения.*
Ключевые слова: *ковидпандемия; профилактика; виртуальные встречи; удаленные сеансы; антикризисное управление; адаптация.*

Опыт Грузии и европейских стран показал, что в условиях ковидпандемии необходимо осуществление комплексных профилактических мер. Кроме того, особое значение имеет координация деятельности на центральном (федеральном), региональном и местном уровнях.

Во-первых, центральное правительство должно обеспечить координацию политики и принятия решений посредством виртуальных встреч, онлайн (удаленных) встреч и т.д. Во-вторых, важно, как государство реализует антикризисное управление в соответствии с разработанной стратегией.

Для эффективного управления глобальной инфекцией решением правительства была создана кризисная группа в составе представителей министерств МВД и Минздрава, а также других заинтересованных ведомств. Осуществляется обмен информацией, принятие решений и координация действий.

Грузия перенимает опыт европейских стран. Примечательно, что в ряде европейских стран формирование особых групп по регионам и муниципалитетам рассматривается как важный механизм антикризисного управления.

Так, например, в Германии федеральная стратегия борьбы с коронавирусом [1] основана на анализе риска пандемии.

В Грузии создан Межведомственный координационный совет, который координирует реализацию превентивных мер центральными и местными органами самоуправления на основании специального постановления правительства Грузии [2]. Запущен антикризисный экономический план [3] по финансовой помощи населения и основным направлениям социально-экономического развития страны.

В Грузии внедряется программа адаптации к вирусам и управления ими [4]. Принятие правил и рабочих процедур правительством происходит своевременно. Центр медицинского контроля предоставляет населению информацию о масштабах и предотвращении распространения коронавируса.

Процесс модернизации государственных услуг продолжается. Служащие могут работать в офисе, однако им рекомендуется работать, не выходя из дома. Проблема в том, что не все министерства и административные учреждения подали заявки на дистанцию. В некоторых случаях это требовало быстрой адаптации к пандемии. Мы имеем дело с тремя типами условий:

1. В офисе присутствует в основном руководство и персонал основных служб, таких как информационные технологии (ИТ), почта;

2. Работать удаленно, когда у сотрудника есть доступ к компьютеру и внутренней сети;

3. Работаем дома, когда у нас нет доступа к компьютеру и внутренней сети, но есть возможность подключиться по телефону и личной почте. Однако мы находимся под ежедневным контролем со стороны руководства.

В некоторых учреждениях объявления о вакансиях организуются один раз в неделю. Возможно введение гибкого рабочего дня (неполный рабочий

день, разделение рабочего времени на 7 дней и т. Д.). В европейских странах высока доля работающих с непольным рабочим днем (особенно женщин).

Механизм выполнения нормативной работы в условиях пандемии еще не урегулирован законодательно. У сотрудников есть возможность работать по выходным.

Следует отметить, что все госслужащие получают полную зарплату, в том числе и те, кто не может работать удаленно. Вопрос об отпуске остается открытым. Никаких особых мер в этом направлении не предвидится.

Необходимо решить вопрос с возмещением дополнительных медицинских услуг. В настоящее время предпочтение отдается контрактам, поскольку, как уже упоминалось, сверхурочная работа не оплачивается. В некоторых случаях это может быть предусмотрено в отчете о многолетней работе, и работнику может быть выплачено вознаграждение в виде дополнительных дней. Для обеспечения финансирования здравоохранения необходимо создать адекватную финансовую среду.

В условиях пандемии работодатели проявляют своего рода нежелание сокращать рабочие места и заработную плату и останавливать карьерный рост. Однако в некоторых секторах (например, в общественном транспорте) тарифные контракты приостановлены для пересмотра.

Парламенту и правоохранительным органам приходится работать в так называемой «ускоренной законодательной процедуре». Это вызывает общественные дебаты о балансе между правами человека и радикальными мерами правительства. Насколько соблюдаются принципы защиты: законность, справедливость, предсказуемость. Кризис, сопровождавший государственный переворот, не должен использоваться против демократии и конституционных прав. Любая мера, ограничивающая права человека, должна быть оправданной, ограниченной и необратимой.

В период пандемии коронавируса населению предоставляются практически все виды услуг, но в ограниченном объеме и без контактов между людьми. Письменные процедуры выполняются по почте или через Интернет. Консультации проводятся только по телефону. В европейских странах приняты

эффективные меры по административной поддержке граждан и бизнеса. Меры в области налогообложения следующие:

- Отсрочка уплаты подоходного налога на основании налоговых деклараций физических лиц на 3 месяца (примечательно, что работникам выплачивается большая часть налога, который не входит в данную льготу). Все санкции, предусмотренные Налоговым кодексом, снижаются в течение 3 месяцев;

- Отсрочка уплаты подоходного налога без ограничений на основании представленных налогоплательщиком доказательств и согласия налогового органа;

- Для самозанятых лиц действие некоторых обязательств по предоставлению дополнительной информации по НДС приостанавливается на период в два месяца или более, если это несет непосредственно Covid-19.

Среди нефискальных отраслевых и региональных событий мы выделяем:

- В сфере международной торговли Федеральное правительство (Германия) с апреля 2020 года выдаёт ссуды с отсроченными процентными ставками компаниям, потерявшим контракты с Китаем и Италией из-за коронавируса;

- В сфере рынка труда существует целевая программа поддержки трудового законодательства «Антивирус». Цель программы - компенсировать работодателям расходы на заработную плату, вызванные карантином и другими задержками, вызванными распространением Covid-19;

- В области сельского хозяйства приняты государственные меры по минимизации воздействия ковидпандемии на растения и домашний скот.

Важно, чтобы у каждого бюджетного заказчика или даже у министерства была стратегия управления рисками, предусматривающая экстренные меры в случае внезапного кризиса.

Есть общие стратегии управления рисками, но в этой ситуации министерства разработали «планы пандемии» еще до кризиса. Они были своего рода подготовительным планом действий. Цель плана - подготовить необходимую информацию и инструкции для сотрудников министерства.

Областные администрации разработают собственные планы борьбы с пандемией.

В планах следующие подготовительные мероприятия: создание целевой группы для разрешения ситуации, состоящей из государственного секретаря, руководителей соответствующих ведомств и внешнего советника медицинского работника; определение «основных функций»; определить необходимый персонал для выполнения ключевых функций; разработка плана экстренных вызовов для персонала; составить планы коммуникации; подача медицинской информации; определение места и времени работы.

В настоящее время, по мере формирования достаточно эффективной системы превенции и лечения, а также, масштабной вакцинации, постепенно снимаются ограничения. Жизнь и трудовая деятельность населения входит в нормальное русло.

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WORLD ECONOMY

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INTERNATIONAL ECONOMIC SANCTIONS AGAINST RUSSIA (LOSSES AND ACQUISITIONS FOR THE RUSSIAN ECONOMY IN THE INTERNATIONAL ASPECT)

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МЕЖДУНАРОДНЫЕ ЭКОНОМИЧЕСКИЕ САНКЦИИ ПРОТИВ РОССИИ
(потери и приобретения для российской экономики в международном аспекте)

Absrtact. *The article examines the aspects of the introduction of economic sanctions against Russia by the leading economically developed countries, analyzes the impact of the introduction of economic sanctions on the national economy of Russia and examines the results of their introduction both in relation to Russia and in relation to the countries that initiated the introduction of economic sanctions against Russia..*
Keywords: *economic sanctions, the World Trade Organization, the import of prohibited food products to Russia, the results of the introduction of economic sanctions.*

Аннотация. *В статье рассматриваются аспекты введения экономических санкций против России ведущими экономически развитыми странами Дается анализ влияния введения экономических санкций на национальную экономику России и исследуются результаты от их введения как в отношении России, так и в отношении стран-инициаторов введения экономических санкций против России.*
Ключевые слова*: экономические санкции, Всемирная торговая организация, импорт запрещенных продуктов питания в Россию, результаты введения экономических санкций.*

Как известно, основополагающей задачей Всемирной торговой организации (ВТО) является распространение либерализма в международной торговле на основе тарифного регулирования со стремлением к снижению ставок пошлин, а в дальнейшем к ликвидации тарифных и нетарифных на пути международного торгового обмена.

Вступая в члены ВТО, страны принимают и выполняют более двадцати основных соглашений, объединенных под одним названием - «многосторонние торговые соглашения». Страны-участницы ВТО, таким образом, подписывают многосторонний контракт, закрепляющий нормы и правила, которые регулируют свыше 90% всей мировой торговли товарами и услугами.

Становясь членом ВТО, страна взаимодействуют с другими членами в рамках недискриминационной торговой системы, где каждая страна получает гарантии справедливого и последовательного отношения к ее экспорту на рынках других стран, обязуясь обеспечивать такие же условия для импорта на свой собственный рынок.

Российская Федерация была принята в ВТО в 2012 г. [1], но уже в 2014 г. в отношении России были применены экономические санкции со стороны стран-участниц ВТО. США, Австралия, Новая Зеландия, Канада вместе со странами Евросоюза ввели в действие первый пакет санкций в отношении Российской Федерации, включая замораживание активов и введение визовых ограничений для лиц, включённых в специальные списки, а также запрет компаниям стран, наложивших санкции, поддерживать деловые отношения с лицами и организациями, включёнными в эти списки. Кроме указанных санкций, было также предпринято замораживание контактов и сотрудничества с Россией и российскими организациями в различных сферах [2].

Впоследствии действие санкций расширилось в части ограничения доступа российских банков и компаний к рынку капитала ЕС, а также затрагивающих нефтяную, авиастроительную отрасли и оборонный комплекс. Эмбарго было введено на торговлю оружием с Россией и запрет на поставки в Россию товаров двойного назначения, предназначающихся для военного сектора. Был также ограничен экспорт в Россию технологий и оборудования, необходимых для модернизации российской нефтяной индустрии.

В дальнейшем перечень санкций только увеличивался. В настоящее время Евросоюз продлил действие санкций до 31июля 2021 г.

Ответным шагом на эмбарго было введение Россией контр санкций в отношении западных сельхозпроизводителей и производителей продуктов питания стран, инициировавших антироссийские санкции. Правительством России был сформирован список запрещённых к ввозу продуктов питания [3].

В соответствии с принятыми правовыми актами Россия ввела с 2014 г. полный запрет на поставки говядины, свинины, плодоовощной продукции, мяса

птицы, сыров, молока и молочных продуктов из стран, входящих в ЕС, США, Австралии, Канады и Норвегии.

Уходом с российского рынка стран-инициаторов введения антироссийских санкций воспользовались другие страны, восполнив требуемый ассортимент продуктов. К ним относятся: Беларусь, Азербайджан, Казахстан, Китай, Бразилия, Аргентина, Уругвай, Эквадор, Турция, Египет, Марокко, Новая Зеландия, Парагвай, Израиль.

Основным поставщиком молока и молочных продуктов в Россию является Республика Беларусь (79%), на Новую Зеландию, Аргентину, Турцию и Уругвай приходится в сумме около 13% физического объема импорта указанных продуктов [4].

До введения санкций 50% мясных продуктов поступало в Россию из США, стран ЕС, Австралии и Канады. На сегодняшний день этот рынок поделили между собой Беларусь, Бразилия, Аргентина, Уругвай и Парагвай.

Ввоз импортной мясной продукции в Россию по итогам 2020 г. составил 570,1 тыс. тонн, что на 18,8% меньше, чем в 2019 году. Говядины и говяжьих субпродуктов было ввезено 57,9% от общего количества импортного мяса, свинины — 2,1%, а мяса птицы — 40,0% (рис. 1). Импортная продукция в общем объеме рынка мяса в России составляет порядка 6% [5].

Важным показателем, влияющим на снижением импорта мяса в Россию является рост отечественного производства этих продуктов, который наблюдался в первые годы действия санкционной политики и продолжился, оставляя все меньше возможностей для импорта этих видов продукции.

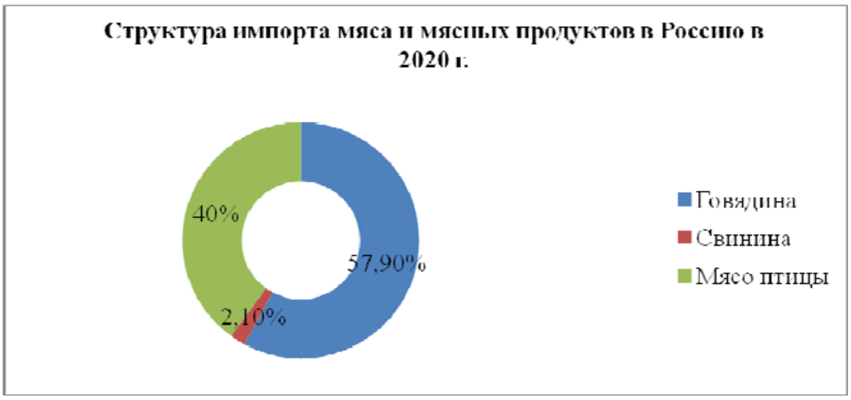


Рис. 1. Показатели импортных поставок на российский рынок мяса говядины, свинины и птицы в 2020 г.

Такая же тенденция по изменению географии импорта прослеживается в отношении поставок свежих овощей и фруктов в Россию. Поставки из Польши, Голландии, Франции, Германии овощей и фруктов прекратились, взамен начались поставки этих товаров из Эквадора, Турции, Египта, Марокко, Аргентины, Китая, Израиля и других стран (рис. 2) [6].



Рис. 2. Доля поставок свежих фруктов и овощей из различных стран в Российскую Федерацию (%) в 2020 г.

Вместе с тем, доля импорта свежих овощей и фруктов постоянно снижается Это произошло в связи с поступлением на российский рынок овощей и фруктов отечественного производителя и снижением спроса на внесезонные продукты, которые в силу роста иностранной валюты к рублю делают их недоступными для большей части населения России.

В связи с запретом поставок и удержанием своих позиций на российском рынке ряд европейских производителей перенесли производство своей продукции в Россию. Датско-шведская компания Arla Foods, финская компания Valio, немецкие Ehrmann, Hochland и Meggle открыли заводы по производству сыров в России, используя для их производства российское сырье.

Следует отметить, что действие экономических санкций оказало в целом благотворное влияние на российскую экономику, поскольку способствовали развитию импортозамещения. От введения санкций в значительной мере пострадала экономика стран-инициаторов введения санкций, российской экономики введенные ограничения пошли только на пользу. Освободившуюся нишу на рынке смогли занять отечественные российские производители.

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ENTERPRISES ECONOMICS AND MANAGEMENT

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CONCEPT FOR ENTRY INTO DIGITIZATION FOR SMALL AND MEDIUM-SIZED COMPANIES (SME)

Abstract. *Using the example of IT-supported accounting, this article presents a concept of how the entry into digitization can succeed for medium-sized entrepreneurs. The components of financing, analysis, transformation, synchronization and documentation are presented in a basic model. The focus of the change measure is on implementability in everyday entrepreneurial life as well as user-friendliness and usability.*
Keywords: *SMEs, subsidies, IT-supported accounting, procedural documentation.*

INTRODUCTION

In times of digitalization, globalization and environmental influences, entrepreneurial success depends on the choice of future strategy. In contrast to industry, small and medium-sized enterprises (SMEs) usually do not have their own specialist department for planning and implementing entrepreneurial processes. In order to compensate for this lack of internal expertise, the Economic Development Agency provides funding for SME's (BMWi, p. 1).

According to Article 2 (1) in the Official Journal of the European Union, the SME class of enterprises includes companies "which employ fewer than 250 persons and which either have an annual turnover not exceeding EUR 50 million or whose annual balance sheet total does not exceed EUR 43 million."(Amtsblatt der Europäischen Union 2003, L 124/39).

According to the Institut für Mittelstandsforschung ifM, that is 3.5 million companies in Germany. This corresponds to 99.5 % of all companies in the private sector. Taken together, SMEs generate 35.3 % of total sales in Germany, equivalent to more than 2.2 trillion euros (Institut für Mittelstandsforschung (IfM) Bonn 2018, p. 1).

For decision-makers from medium-sized companies, the following concept is intended to serve as an action plan for the realignment of corporate processes.

BASIC MODEL FOR THE REALIGNMENT OF CORPORATE PROCESSES

Peter F. Drucker (1909-2005) was the world's leading management teacher. He was convinced that people are an organization's most valuable resource. To be successful, the question facing an organization must be: "What must we do today to achieve results? (Drucker 2015, pp. 17-28).

For guidance on which realignment makes sense for companies, Fredmund Malik recommends in his book "Strategy: Navigating the Complexity of the New World", using the "Profit Impact of Market Strategy" PIMS study. Across all industries, it was found that a structural configuration and factors that increase productivity in the company are particularly suitable for this purpose (Malik 2011, pp. 176-177).

One area that is predestined for this and that exists in almost all companies, regardless of the industry, size and number of employees is accounting. In the "brain" of the company, both external (customers/suppliers) and internal (management/staff) company data is connected. Through digital data transfer in online banking, e-mail traffic, connection via interface to the tax authorities (IDEA) and the area of tax consulting (e.g. DATEV), a large part of the accounting work can nowadays be done automatically with IT support (Vogel Business Media GmbH & Co. KG, p. 1).

The following basic model consists of 5 phases:



Figure 1. Basic model for the realignment of corporate processes

Source: Authors own representation

The Financing (I.) and ACTUAL Analysis (II.) form the preliminary work. The Transformation (III.) as a central point, is flexible and changeable.

Depending on the requirements, the functional area to be changed or, as in Porter's value chain, a support or primary activity can be used here. This can be the

Firm infrastructure, Human Resource Management, Technology procurement in the company or inbound logistics, Production, Marketing and Sales, outbound logistics or Customer service (Have et al. 2010, p. 261).

Synchronization (IV.) and Documentation (V.) constitute the post-processing and, like the pre-processing, are fixed components in the overall process.

PRACTICAL APPLICATION: IT-SUPPORTED ACCOUNTING

Translated into practical application when converting to IT-based accounting:



Figure 2. Transformation in IT-based accounting
Source: Authors own representation

In the following sections, the individual steps I. to V. are specified:

I. FINANCING: CHECK AND APPLY FOR FUNDING

Before starting a project, it should be clarified whether federal or state funding is available. The program "Promotion of Entrepreneurial Know-How” of the Federal Office of Economics and Export Control (BAFA) offers basic support on all organizational, personnel, economic and financial issues of business management. In addition, young companies, companies from the third year after foundation (existing companies) and companies in economic difficulties are eligible for application (Bundesministerium für Wirtschaft und Energie, p. 5).

II. ANALYSIS: CHECK THE IT-ARCHITECTURE

The analysis is closely linked to the first point, Financing. It is essential to review the software and hardware systems used regarding data security, the required control mechanisms, logging and access authorizations. Responsible employees for implementation must be clearly identified, and a certain amount of time and financial leeway should be factored in. In the further course, this data is required for the creation of the procedural documentation (see point V.) (Giebichenstein and Schirp 2016, p. 32).

III. TRANSFORMATION: DIGITIZE ACCOUNTING

The area for strategic reorientation in this practical case is IT-supported accounting. The components of accounting include document management, including scanning and processing and of electronic invoices and archiving of (tax-relevant) data. The special focus of the tax authorities here is on cash-intensive businesses as well as cash register systems with technical security equipment (TSE) (Vogt, p. 1).

IV. SYNCHRONIZATION: SET UP INTERFACES

To be able to guarantee smooth networking of accounting as a "core process" with the existing upstream and downstream systems in the company, this point is of particular importance. The recording of working time in the company, an existing document management system (DMS) or an enterprise resource planning system (ERP) must be coordinated with each other. Here, not only the purely technical aspect must be considered, but also the functionality in terms of user-friendliness and the know-how of the people using the system. Ideally, the user's perspective is included in the overall process. Agile methods, such as design thinking, enable feedback from the people involved and the inclusion of their requirements and needs as early as the planning stage. (Specht 2019, p. 83).

V. DOCUMENTATION: PROCESS OF THE PROCEDURE

The process documentation describes the selected organizational and technical procedures in the accounting and IT departments. Principles of Proper Accounting and Bookkeeping and Retention of Accounts, Records and Documents in Electronic Form as well as Access to Data, Ministry of Finance (Bundesministerium der Finanzen BMF) Explanatory Note / (Grundsätze zur ordnungsmäßigen Führung und Aufbewahrung von Büchern, Aufzeichnungen und Unterlagen in elektronischer Form sowie zum Datenzugriff (BMF-Schreiben IV A 4 – S 0316/13/10003 vom 14. November 2014 (GoBD))) (Bichler and Matt 2016, pp. 5–6).

The procedure documentation should include a general description of the company, user documentation, technical system documentation, operational documentation and an internal control system. (Bundesministerium der Finanzen, p. 37).

PROJECT SUCCESS AND OUTLOOK

A seamless, complete and chronological listing of the steps during the transformation process not only has a legal character here, but also ensures the traceability of the measures. A review of the result and a feedback to the targeted corporate goal, a target-performance comparison, is also made possible. The following added value can be realized through the overall concept:

- Investment costs for companies are reduced using state support.

- Productivity is increased by synchronizing the IT-based systems used in the company with the financial system. As a result, this leads to savings in working time and labor costs and increases flexibility in company management, e.g., in the "home office".

- The creation of procedural documentation considers the legal requirements of the tax authorities and can be used as an individual company manual. This facilitates the identification of savings potential and the induction of new employees.

Conclusion

IT-supported accounting can form the basis for further innovation management and digitization measures in the company. Artificial intelligence A.I., prediction, pattern recognition, machine learning, and blockchain technology can be aligned with it.

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IMPACT OF EXTERNAL FACTORS ON THE COMPANY'S CRISIS CAMP

Abstract. *The article contains external and internal factors that affect the crisis state of enterprises and defines the main directions of their improvement in order to increase the efficiency of their management*
Keywords: *crisis, crisis state, factors, wages, bankruptcy, enterprise.*

Introduction

The success of the economic policy of the state as a whole consists in ensuring financial independence, solvency of the basis of the economy - individual enterprises of various sectors of the economy, forms of ownership. The problem of the probability of bankruptcy is important for a significant number of domestic enterprises, which, against the background of stable, unresolved problems over the years, including those related to the effectiveness of the financial and economic system of the country, operate in conditions of both a global and deep domestic economic crisis, an extremely unstable political situation, imperfection of legal and tax legislation. All this leads to an increase in the number of insolvent enterprises that are clearly directed towards bankruptcy, which, unfortunately, leads in most cases to the liquidation of such enterprises. And this is becoming common [7].

Literary review

A wide range of issues related to the bankruptcy of the enterprise were thoroughly investigated by well-known foreign scientists such as Altman E., Lis R., Taffler A., Springate G., Gryaznova A.G., Ivanova G.P., Fedotov N.A., Zaitseva O.P., Saifulin R. S. and Kadykov Voinarenko M., Guk O. V, Matviychuk A.V., Trotz I.V., Shapurova A.A. and many others are also engaged in the study of bankruptcy problems. However, the rather fragmented coverage of issues devoted specifically to bankruptcy problems, as well as the importance of the economic essence of enterprise

bankruptcy for sustainable market relations, confirm the significance of this topic and require continued research.

The purpose of the article is the identification of internal and external factors that cause the crisis state of enterprises and can lead to its bankruptcy.

Results

The prerequisites of bankruptcy are diverse - this is the result of the interaction of numerous factors, both external and internal. They can be classified in this way. Internal factors:

1. Deficit of equity capital, as a result of inefficient production and commercial activities or inefficient investment policy [5].

2. Low level of technology, technology and organization of production.

3. Reducing the efficiency of using the enterprise's production resources, its production capacity and, as a result, a high level of cost, losses, and the use of equity.

4. The creation of excess balances of construction in progress, in-process production, production stocks, finished products, as a result of which there is a congestion, the turnover of capital slows down and its deficit is created. This forces the company to attract loans, which may be the reason for its bankruptcy [2].

5. Unreliable client of the enterprise, which is calculated late or not calculated at all due to bankruptcy, forcing the enterprise to get into debt itself. So a chain bankruptcy occurs [3].

Lack of sales due to the low level of organization of marketing activities to study product markets, create a portfolio of orders, improve the quality and competitiveness of products, and develop price policies [1].

Attracting borrowed funds into circulation of the enterprise on unfavorable conditions, which leads to an increase in financial costs, a decrease in the profitability of economic activities and insolvency to self-financing [9].

Rapid and uncontrolled expansion of business activities, resulting in higher inventories, costs and receivables than sales. Hence, there is a need to raise short-term borrowings that may exceed net current assets (equity). As a result, the enterprise falls under the control of banks and other creditors, as a result, bankruptcy may threaten.

External factors include:

1. Economic: the crisis state of the country's economy, the general decline in production, inflation, instability of the financial system, rising prices for resources, changing market conditions, insolvency and bankruptcy of partners. One of the reasons for the insolvency of business entities may be the incorrect fiscal policy of the state.

2. Political: political instability of society, foreign economic policy of the state, disruption of economic ties, loss of markets, changes in the conditions of export and import, imperfection of legislation in the field of economic law, antimonopoly policy, entrepreneurial activity and other manifestations of the regulatory function of the state [7].

3. Increased international competition in connection with the development of scientific and technological progress.

4. Demographic: population size, composition, well-being of the people, the cultural level of society, determining the size and structure of needs and the solvent demand of the population for certain types of goods and services [8].

5. Insolvency is associated with imperfect tax legislation, when the company, having received funds from the buyer, must pay taxes. It turns out a paradox - it is unprofitable to be a law-abiding subject. If you pay all the taxes without receiving money from the buyer, you will go bankrupt, and vice versa, if you do not pay taxes - you can hope for their postponement or forgiveness, but you will not be bankrupt [4].

Bankruptcy of the enterprise is the final stage of the crisis state of the enterprise, which is characterized by the fixation of negative results of financial and economic activities in the process of moving in the direction from temporary local to stable general inability to fulfill its obligations. It is important to recognize the early symptoms of the crisis state of the enterprise, constant monitoring of the set of indicators of the enterprise, which are able to signal the approach of such a state. The need to use a system of economic indicators - such indicators of the enterprise, the dynamics of which clearly corresponds to the negative changes in the economic development of the enterprise, its economic activity. Given the importance of early

diagnosis of the probability of bankruptcy, we can give the following sequence and composition of groups of symptoms of bankruptcy.

The first group of symptoms clearly characterizes the slowdown in business activity of the enterprise: reduction of asset turnover ratios, debts, inventories, return on assets; increase in the duration of the operating cycle, capital turnover, inventories, debts against the background of reduced profits and profitability of the enterprise. But the deterioration of these indicators is the result of unfavorable dynamics of characteristics that do not give grounds to consider the current financial condition of the enterprise as critical, but signal the possibility of its sharp deterioration in the future in the absence of timely measures: lack of enterprise development strategy; limited sources of capital investment; underestimation of restoration of equipment and technology; ineffective depreciation policy; loss of market position; irregular work and forced frequent downtime; outflow of experienced employees.

The second group of symptoms signals the amount and type of debt of the enterprise, which in the near future will inevitably lead to its complete insolvency. Fixing the presence of insolvency of various degrees - current, critical or over-critical, signals the financial condition of the real debtor company [6].

The above indicates the need to diagnose the likelihood of bankruptcy at the earliest stages of inefficient enterprise, and the need to form an effective management response to the timely recognition of the symptoms of the first group. The importance of bankruptcy in stable market relations is difficult to overestimate. Thus, the main condition for the recovery of the domestic financial and economic system, a means of preventing bankruptcy is to restore the solvency of taxpayers who are on the verge of bankruptcy, to prevent the liquidation of the business entity. This provides financial recovery of enterprises, preservation of jobs, increasing production capacity, which is the basis of the most important areas of economic policy. The crisis economy needs an effective counteraction mechanism, the functional purpose of which is to restore the solvency of debtor companies, which includes a system of control, diagnosis and, if possible, protection of enterprises from possible economic collapse.

Conclusions

In order to ensure their own economic stability, as a guarantee of further successful operation, it is advisable to pay sufficient attention to forecasting possible threats, diagnosing crises and crisis phenomena and applying an early warning and response system. Different management decisions can lead to different consequences, so the crisis must be a fully controlled and managed process by senior management. In this case, everything depends on professionalism, the art of management, the nature of motivation, understanding of the causes, factors and consequences of crisis situations, as well as responsibility to yourself and others.

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PRODUCTIVE FORCES DEVELOPMENT AND REGIONAL ECONOMY

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RETURNS TO EDUCATION BY AGE IN POST-COMMUNIST ECONOMIES: EVIDENCE FROM ALBANIA

Abstract. *In this study we would like to compare the returns to education by age and analyze the gap between male and female as well as compare the education and find the significance of the education level based on age and level of education. It is important to see how significant is the return to education by age for those that have finished their education in pre and post-communist Albania schooling system .As we all know the human capital is one of the most important part of the economy.*

Keywords: *Education, income, post-communism, Albania.*

Introduction

It can be stated with no controversy that human capital is a crucial prerequisite to the development of economies and societies. Higher levels of human capital are associated with higher incomes, better health, lower need for social assistance, lower rates of participation in criminal activities and improved democratization (because educated individuals tend to be more informed voters). However, in ex-communist countries central planners set the wages by industry so earnings and income profiles were compressed compared to those of market economies (Chase, 1998). Thus, ex-communist provide an excellent opportunity to investigate returns to education and changes in income attainment during processes of transformation (Verhoeven et al., 2005). The evolution of the newly created post-communist markets into mechanisms that reward human capital is also important for several other reasons. First, higher returns to education attract private and public investments into education and lead to enhanced human capital. Studies present evidence from developing nations that, as returns to education increase, households tend to have fewer children and invest more in the quality of education (e.g. Khan and Sirageldin 1979: Handa, 2000: Schultz, 2005). Additionally, higher returns to education domestically can provide a viable alternative to the outmigration of talented individuals. Thus an examination of earning profiles and how they differ by gender, type of education (private vs. public) and experience can provide important insights for transitional economies.

In this paper we provide recent estimates of the returns to education and experience in Albania. Albania is one of the last Eastern European communist countries to adopt a non-communist regime in 1990 after almost 50-years under one of the most ruthless communist regimes ever seen. During the communist era Albanians had very limited 'freedom' and the government would decide whether they could pursue a higher education or not , what major, where they would work after they graduated and how much they would earn. Education in Albania is also of particular concern in post-communism, especially when considering the rate of outmigration during the last two decades. More than six hundred thousand Albanians (i.e. almost 20 percent of the country's population) live and work in the neighboring countries Greece and Italy while many others live, work and study in Western Europe and North America. The rate of return migration among individuals educated abroad is very low, and young people are often more preoccupied with migration rather than completing their education.

Despite its importance we have found no studies that rigorously examine how the Albanian market rewards human capital. Several studies that use datasets from Albania focus on migration (e.g. Germenji and Gedeshi 2008; Çaro and van Wissen, 2007) or access to education in Albania (e.g. Hazans and Trapeznikova, 2005). However, there are quite a few studies that examine changes in the structure of earning and returns to education and experience in other ex-communist countries (e.g. Krueger and Pischke, 1992: Chase, 1998: Verhoeven, Jansen and Dessens, 2005: Rutkowski, 1997). These studies generally find that the returns to education rise significantly in post-communism (Orazem and Vorodipec, 1994: Chase, 1998: Vecernik, 1995: Brainerd, 1996: Flanagan, 1994) and the gap in earnings increases significantly (Krueger and Pischke, 1992: Rutkowski, 1997). On returns to education differentials by gender Chase (1998) finds that women receive higher returns to education than men in the Czech Republic but men have larger increases in returns during regime changes. Some studies on returns to experience in transition economies suggest that returns to experience decrease (Chase, 1998) and returns to experience for women decrease (Jones and Ilayperuma, 1994). By contrast, Brainerd (1996) finds that returns to experience increased during the economic transition in Russia

and Orazem and Vorodipec (1994) find that returns to experience increased in post-communist Slovenia.

We investigate the returns to education and experience using the Albanian Living Standards Measurement Study survey (LSMS) in 2005. This rich dataset allows us to examine the returns to education not only by gender but also by degree type (general secondary, professional, 4-year university, graduate school) as well as whether a diploma was earned in or outside Albania. In addition we estimate whether the market rewards diplomas earned during communism at a similar rate to those earned after. The location of the degree granting institution, as well as the timing are particularly interesting as higher education in Albania before 1990 was geared to serve an economy not based on open markets. Higher education in Albania struggled to adjust toward a western-type higher education system, especially during the first decade after 1990. A differential return to recent degrees would indicate that the system has adopted to better serve the needs of a market economy. The domestic return to degrees earned in western universities is also of interest as a high return would be a very good mechanism to re-attract some of the nations' talented and well educated youth. High returns to human capital would significantly help the county's efforts to join the European Union. We use multivariate regression techniques to isolate the desired impacts.

The rest of the paper is organized as follows. Data from the Albanian LSMS in 2005 is presented in section two. The empirical strategy used to examine the returns to education is described in section three. Results are discussed in section four and section five provides a summary of the findings.

Data

The data for this study have been borrowed from the 2005 LSMS survey carried out from the World Bank and the Albanian National Institute of Statistics. The survey was administered to 3,600 households from Tirana (the capital city) as well as other urban and rural areas in Albania. The survey slightly oversamples Tirana, however, randomly chosen households are included from all Census Enumeration Areas.

Methodology

We estimate the returns to education in a multivariate framework. Specifically, we estimate the following equation with Ordinary Least Squares (OLS).

$$\ln(w_i) = x_i\beta + \sum_j \gamma_j educ_{ij} + \varepsilon_i \tag{1}$$

Where is the hourly wage of the ith person, is a vector of control variables, are binary variables indicating if person i has degree j, are parameters to be estimated and are regression errors.

We control for gender, marital status (married, divorced, living together or widowed as opposed to never married). We also account for the number of children, number of children squared, living in an urban area, living in the relatively developed central region. Finally experience and experience squared is also included, but we proxy for this variable with the respondent's age because actual years of experience would be endogenous. Educational categories include a general high school education, vocational secondary education, vocational post-secondary education; university diploma from a domestic school and from a school located abroad and graduate degrees from domestic or foreign colleges. The omitted category is no high school education. So is interpreted as the return to degree j relative to having no high school diploma.

In addition, we provide other specifications that interact education with gender to examine if the returns to the different educational categories are different by gender. We also estimate specifications that interact education with an indicator of whether the degree is received prior to 1990 or after. As noted, this specification tests if degrees obtained during the totalitarian regime produce differential returns to recent degrees, ceteris paribus.

Accounting for Self Selection in Employment

We estimate the determinants of wages but we only observe wage offers for only those who work. People who work are not a randomly selected sample from the population, rather one that self selects into employment. Therefore estimating the determinants of wages from the subpopulation who work may introduce bias. To

control account for potential bias we introduce alternative specifications of our main models that use the Heckman correction (Heckman, 1979).

Specifically, we assume that the population regression function can be expressed as:

$$w^* = X\beta + u \tag{2}$$

where w* denotes an underlying wage offer, which is not observed if the respondent does not work. We further model the probability that one works as:

$$\Pr(D = 1 | Z) = \Phi(Z\alpha) \tag{3}$$

where D is an indicator that equals one if the respondent is employed, Z is a vector of explanatory variables that includes at least one variable that is excluded from X, is a vector of parameters, and Φ is the standard normal cumulative distribution function (CDF).

Table 1. Returns to education by gender

	All			Young			Old		
	Param	SE		Param	SE		Param	SE	
male	0.456	0.024	***	0.504	0.043	***	0.420	0.030	***
mar_m	0.037	0.045		0.015	0.059		0.010	0.098	
mar_ds	-0.115	0.142		-0.453	0.402		-0.091	0.169	
mar_lt	0.112	0.212		0.089	0.312		-0.015	0.302	
mar_wid	-0.005	0.095		0.526	0.287	*	-0.104	0.128	
e_hs	0.131	0.043	***	0.105	0.050	**	0.145	0.038	***
e_voc23	-0.046	0.121		-0.045	0.128		0.211	0.068	***
e_voc45	0.224	0.054	***	0.212	0.063	***	0.284	0.035	***
e_univ	0.654	0.051	***	0.629	0.062	***	0.640	0.042	***
e_univa	0.710	0.244	***	0.707	0.285	**	0.850	0.243	***
e_grad	1.031	0.271	***	1.067	0.286	***	0.602	0.167	***
e_grada	1.115	0.281	***	1.025	0.349	***	1.370	0.371	***
oldhs	0.009	0.052							
oldvoc23	0.265	0.138	*						
oldvoc45	0.052	0.059							
olduniv	-0.020	0.060							
oldgrad	-0.446	0.319							
oldabroad	0.163	0.297							
nr_children	-0.036	0.024		0.056	0.054		-0.035	0.027	
nr_children2	0.003	0.006		-0.020	0.015		0.005	0.006	
urban1	0.236	0.024	***	0.210	0.042	***	0.256	0.030	***
central	0.238	0.022	***	0.335	0.039	***	0.181	0.027	***
exp	0.051	0.008	***	0.172	0.036	***	0.051	0.020	**
exp2	-0.001	0.000	***	-0.003	0.001	***	-0.001	0.000	***
intercept	2.869	0.139	***	1.267	0.467	***	2.871	0.497	***
N	3838			1336			2470		
R2	0.26			0.30			0.24		

The conditional expectation of wages given that the person works is then:

$$\begin{aligned} E(w \mid x, D=1) &= X\beta + E(u \mid x, D=1) \\ &= X\beta + \rho\sigma_u \lambda(Z\alpha) \end{aligned} \tag{4}$$

If the errors of the selection and the wage equations are assumed to be distributed jointly normal where ρ is the correlation between the errors of the employment and the wage equations, is the standard deviation of u, and is the inverse Mills ratio (see Heckman, 1979).

Results

Preliminary findings suggest that individuals who obtain a high school diploma earn significantly more than those without one. Furthermore, those who receive a bachelor degree abroad earn about 16 percent more than the ones who receive a bachelor degree in Albania. The gap in average earnings widens by almost 60 percent when it comes to individuals who have a graduate degree. We also are able to document a net penalty in the range of 45-50 percent associated with being female, after accounting for differences in education, experience, family composition and geographic location. This gap (also documented in Cobo and Mykerezi, 2010 and Miluka and Grown, 2010), could reflect gender discrimination in the Albanian labor market.

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POTENTIAL OPPORTUNITIES FOR DEVELOPMENT OF THE MINERAL WATER MARKET IN BULGARIA

Abstract. *Water is a major component of the natural environment and an important resource without which life on the planet is unthinkable. One of the greatest natural resources of Bulgaria are the mineral waters distributed throughout the territory. Studies have shown that the utilization of mineral waters in Bulgaria is about 50%, which is an indicator of low efficiency in the absorption of these natural resources. Three possible development scenarios have been developed over the next ten years under different consumption hypotheses to reach the average European level of consumption, as the maximum consumption is the EU.*

Keywords: *mineral waters, mineral water consumption, natural wealth, mineral water consumption in the EU*

INTRODUCTION

Since the ancient times people have valued the qualities of the mineral waters and have arranged their settlements around mineral water springs. Sofia and Blagoevgrad, Sandanski and Kyustendil, Sapareva Banya, Hisarya and many other settlements in Bulgaria have been established in proximity to mineral springs and nowadays they have developed as tourist centres [8]. Water has turned into an economic factor. Bottled water is present in the home of each Bulgarian. It is used for balneological purposes, recreation and tourism [3]. It is a source of geothermal energy and is a resource for the bottling industry.

The development of the health culture and the tendencies in the people's lifestyle contribute to the increased search for bottled water. Water consumption, according to data provided by Directorate – General for Environment of the European Commission, has increased seven times within the 20th century worldwide. The consumption of bottled water is permanently increasing throughout the world. If the world consumption was around 250 billion litres in 2011, the expectations for 2021 are that it would reach 450 billion litres [5].

The mineral waters of Bulgaria are of exceptional quality and they have a wide range of applications – for bottling, treatment and prophylactics, for recreation and sports, for drinking and household purposes [9].

Even at the time of its output, the mineral water contains minerals or other dissolved substances which change its taste or give it a therapeutic value [10].

Bulgaria has a large number of sources of mineral water but they are not efficiently utilized. This circumstance has provoked interest and to a large extent determined the topicality of the study. In the availability of a high concentration of mineral springs in Bulgaria on its relatively small territory, more opportunities and methods for their complex utilization should be sought. According to data provided by the Bulgarian Union of Balneology and Spa Tourism, the country occupies the second place in the world in terms of mineral water resources although this has not been officially confirmed by hydrogeological studies. The perspectives for utilization of the water from mineral springs are multidirectional: balneological and rehabilitation, recreational, rest and tourism, utilization of the geothermal energy provided by them, and of course, the bottling industry.

PURPOSE AND OBJECTIVES OF THE STUDY

The natural mineral waters in Europe, as well as in Bulgaria, are consumed and used with a view to their specific benefits for the human health and body. Water is the most important source of hydration and is of great importance for the correct functioning of the organism. The human body contains between 65% and 85% water, depending on the age. Bottled water provides a comfortable and healthy way of achieving permanent hydration. Pharmacological, physiological and clinical studies identify the natural mineral waters as a natural way of hydration and provision of different benefits for the health, depending on their composition [1]. The unique mineral composition could meet specific health needs. The users may choose water containing calcium, magnesium, bicarbonate, fluoride or water with low sodium content, depending on the taste preferences or dietary requirements. The mineral water is an electrolytic dissociated solution of mineral substances and gases, and sometimes contains organic components.

The question regarding the extent to which the consumers are able to make an informed choice based on comfort, taste and health benefits, is very important. In search for such answers, a survey was conducted in order to determine the

consumers' attitudes and the factors influencing their choice of water, including mineral water.

The purpose of this study was to determine whether the awareness of the consumers would lead to higher consumption of mineral water and would increase the production of bottled water, respectively.

Another purpose of the study is to use the established results for update of the statutory requirements for utilization of mineral water in the food industry and for bottling.

The unique mineral composition may meet specific health needs [2]. At a first glance bottled waters may seem identical but in fact they are very different and each of them is unique in its underground origin and flavour combination. This is due to the specific mineral composition, which leads to a specific quality, nature and taste.

The analysis and assessment of the unused natural resource of mineral waters and the opportunities for their sustainable utilization is of significant interest to the researchers. The problem of the condition and tendencies of use of the mineral waters in food industry is of public significance. The need of comprehensive improvement of the activities related to management and exploitation of the mineral waters in Bulgaria outlines another group of arguments for the choice of the topic and purpose of the study towards the topical problems for rationalization and optimization of the management of mineral waters on the basis of an economic analysis of the sector.

Subject of the study is the consumption of mineral, spring and table waters by the population and their use in the bottling industry, as well as a comparative analysis of the position of Bulgaria among the other countries within the European Union.

The main question of the study is directed towards the efficiency of the model of use of the mineral waters. The perspectives of subsequent application within the context of the unused resources depend on the direction of its verification. Considering their large share, the presumption of undiscovered opportunities and potential for a better utilization and exploitation of the mineral waters, is well-founded. The focus is on a change in the regime of use of mineral waters and a proposal for a conceptual model of rational utilization of the mineral waters which

would contribute to the increase in the volume of bottled mineral water and would increase the efficiency of its use as a natural resource.

The main purpose of the study is to outline opportunities for provision and exploitation of the unused resource of mineral waters after clarification of the availability of economically sustainable utilization of mineral waters in the bottling industry and verification of the outlined theoretico-practical and applied aspects in an organizational and management plan.

The research tasks carried out for the performance of the main objective, are:

- Profound analysis of basic theoretical and practical applied aspects in an organizational and management aspect.
- Review and assessment of the opportunities and restrictions resulting from the application of the effective legislation in Bulgaria.
- Outlining the tendencies in the use of mineral water as a natural resource in the food industry, and in particular the bottling of mineral and spring waters.
- Verification of opportunities for exploitation of the mineral water springs currently available, or proposal of new ideas for future maintenance and utilization of mineral waters.
- Proposal of guidelines for improvement of the forms of exploitation of the mineral waters used hitherto, for the purpose of increasing the share of the natural resource used.

METHODOLOGY OF THE STUDY

Focuses in the study are the organizational and management and economic aspects of the conduct of the entire process of exploitation of the mineral waters and the search for new opportunities for exploitation of the natural resources. In a theoretical aspect the most frequently used methodologies for processing of primary and secondary data are classified and analysed with regard to the efficient management of the mineral waters according to the literature sources. Analyses and prognostications are made with regard to the sales and exploitation of the natural resource. Tendencies, risks, as well as the necessary financial resources for exploitation of water intake facilities are analysed within the context of the efficiency of management.

The methodology applied in the study for the achievement of the set goal and the performance of the assigned tasks, includes:

- theoretical analysis and synthesis used for the purpose of research and summary of the theoretical formulations;
- content-analysis used for interpretation of the collected information, for commenting various publications, as well as for the purposes of the empirical study and more precisely, a choice of variables which the questionnaire should be based upon;
- a questionnaire for the collection of the data necessary for the analysis;
- statistical methods used for objectification of the results of the analyses and research and in search for the causal connections;
- comparative analysis and assessment of the legal mode of exploitation and management of the mineral waters, of the different types of opportunities for maintenance and water intake, of the advantages and disadvantages of the permissive regime and the concession regime for the provision of the resource to potential investors.

The methodological foundation of the study is on the basis of the systematic approach, the analytical, economic-sociological, comparative, deductive, logical and other conventional scientific methods of study. Economic, causal, systematic, structural, economic-statistical and comparative analysis of the information from the study have been used.

The data from the study are processed using statistical methods and the results show the possible tendencies and various scenarios for development.

One of the main tasks of statistics is the study of the connection between random variables. For the purpose of statistical data processing, a Correlation and a Regression analysis are used. The Correlation analysis is applied in order to describe the strength and direction of dependency between variable values.

In this case we try to find the equation of the straight line which passes “as close as possible” to the points from the correlation field, i.e. it reflects the dependency between the two variables in the best possible way.

A special place in the regression analysis is occupied by the linear model of connection between two random variables X and Y. Where the dependency between the two variables (the resultant Y and the factoral X) is linear by form, the points are located around an imagery straight line (ascending or descending). In this case we try to find the equation of the straight line which passes "as close as possible" to the points from the correlation field, i.e. the dependency between the two variables is reflected in the best possible way.

Linear regression of the dependency between the production and usage of mineral waters – expressed through the following equation:

y = 0,9971x – 1,2708, R2 = 0,996

Table 1. Regression model
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1,000[a]	1,000	1,000	3,98059

a. Predictors: (Constant), Consumption.

R is the Pearson correlation coefficient R: 1,00.

R Square is a coefficient of determination R2. The coefficient of determination R2 (the square of the correlation coefficient) shows the part of dispersion of Y, which is related to or may be explained by the dispersion of X. It is one of the criteria for assessment of the adequacy of the regression model.

If we use the coefficient of determination in connection with the correlation coefficient, the correlation between the production and consumption is interpreted as very high, as it can explain the dispersion. In the present case 99.96% of the dispersion of Y may be explained by the dispersion of X.

Table 2. Dependency between usage and production ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	374020,734	1	374020,734	23604,813	,000[a]
Residual	142,606	9	15,845		
Total	374163,340	10			

a. Predictors: (Constant), Consumption
b. Dependent Variable: Production

Adjusted R Square is the levelled coefficient of determination R2 = 0,9996

Standard Error is the standard error of the valuation SY/X = 3,98

The second ANOVA table contains data on the coefficients of the regression equation and their statistical significance.

Table 3. Coefficient of modification of the consumption of bottled water
Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1,515	4,276		,354	,731
Consumption	1,002	,007	1,000	153,639	,000

a. Dependent Variable: Production

The total dispersion of Y is calculated on the basis of the sum of the squares of the deviations of each single value of the resultant parameter Y from the arithmetic mean of those values. The total dispersion of Y is regarded as the sum of:

- the deviations of the theoretical values YT from the arithmetic mean of Y (SS factor). These are the differences related to the influence of the independent variable.

- the deviations of the actual values from the theoretical ones (YF – YT) (SS residuals). This is the so called dispersion of residuals, which bears information about the differences of Y, owing to the influence of random (unstudied) factors.

The larger the part of dispersion owing to the influence of the factor (SS factor) and the smaller the part of dispersion of residuals (SS residuals) is, the dependency is stronger and the model describes better the dependency between the studied phenomena. These two parts of the dispersion are averaged (MS) by dividing into the degrees of freedom (df), where: m – number of the factor-parameters in the equation of the linear regression (in this case $m = 1$), n – number of observations (in this case $n = 11$).

On the basis of these mean values, Fisher F-criterion is calculated under the indicated formula $F = 23604,813$.

The value of the last column Significance F is compared to the selected degree of reliability $p < 0,05$. In this case Significance $F = 0,000 < 0,05$, which means that the dependency is statistically significant for the selected level of significance 0,05.

The formulation of conclusions about the statistical significance of the regression model and its coefficients is very important for the assessment of the

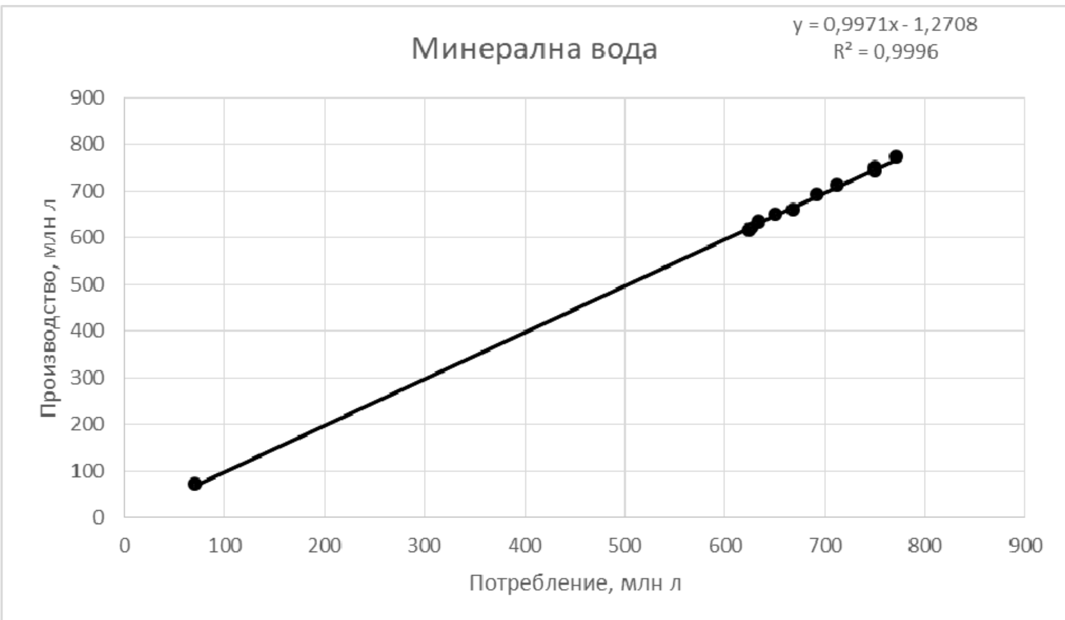
quality of the linear method in prognostication of the Y-values. In this example the model, its coefficients and the coefficient of determination are statistically significant. The value of the coefficient of determination R2 = 0,9996 shows that 99.96% of the total dispersion of the resultant parameter may be explained with the dispersion of the "consumption" factor. The remaining 0.04% are due to factors not included in the model.

The tendency line is a graphical means of analysis of a series of data and for prognostication of future values of the data series, presented in a diagram. The construction of the tendency line is illustrated on the basis of the discussed regression dependence between the consumption and production of mineral water, Fig. 1.

On the basis of a model established in the last decade, y = 0,9971x – 1,2708, R2 = 0,996 a model of the trend for the future 10 (ten) years has been made. The model for the last 10 years shows an increase by 4%.

We apply the formula for the model with the hypothesis of reaching an average European consumption of 117 litres per resident and the maximum for the European Union 188 litres per resident and we make calculations for the provisional number of 7 million residents of the country [4].

Production, million liters ***Mineral water***



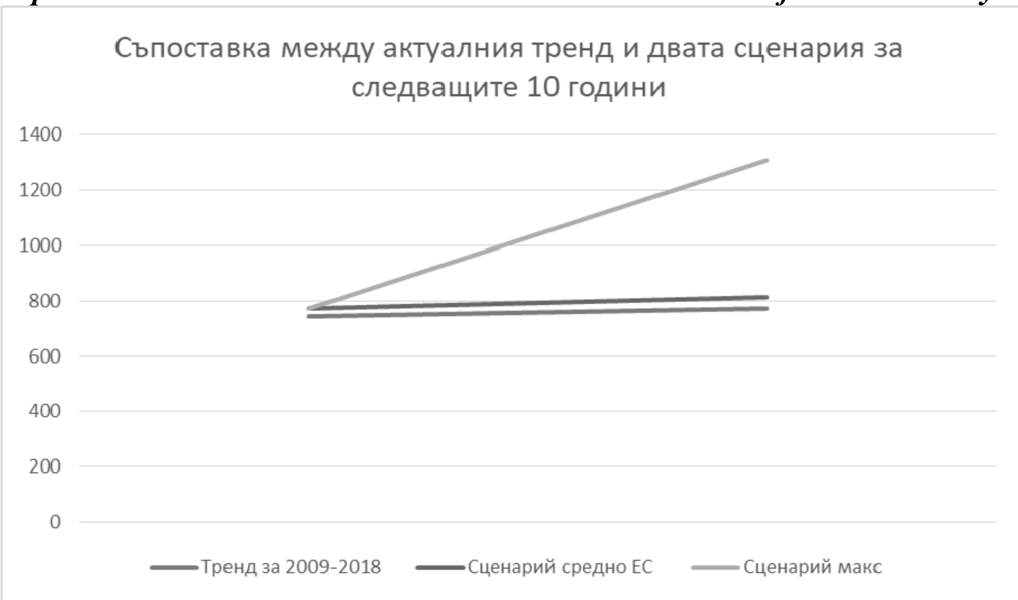
Consumption, million liters

Fig. 1. Dependence of the production on the consumption of mineral waters

The result shows that in the development of these hypotheses, a growth of 2.6% per annum would be achieved, reaching the average European level of consumption and a growth of 7% per annum for the reaching of the current maximum values of the European Union.

Fig. 2. shows results of three possible scenarios of development in the next 10 (ten) years. The first (blue) line shows the trend in the event of preservation of the growth rates of consumption from the last 10 years. The second (red) line shows increasing consumption in the next 10 years under the hypothesis of reaching the average level of consumption of bottled water in the EU. And the third (green) line shows the trend of development under the hypothesis of reaching such levels of consumption of bottled water as the countries with the highest consumptions from the EU member states.

Comparison between the current trend and the two scenarios for the next 10 years



Trend for 2009-2018 EU average scenario Scenario max

Fig. 2. Scenarios of development under different consumption hypotheses

FINDINGS AND CONCLUSIONS

The data have been processed on the basis of free resource under the current tariff and show how precisely the profit for the state would be from the efficient use of the mineral waters. The review and calculations, of course, have been made under the ideal hypotheses that the whole quantity of free resource is used for one purpose or another. Actually this cannot happen but it shows the ranges (minimum and maximum) of the positive result in case of adequate utilization of the mineral waters.

Opportunities for profits from the use of the mineral waters for different purposes or losses from the failure of using them, whatever this process could be called, this is a result of inefficient management, in our opinion.

In case the theory of transaction expenses is applied in practice, the mineral waters could be removed from the Concessions Act and could be governed by the contractual theory [7].

Under such circumstances it would be possible to render into account all expenses made for the whole process from research to conclusion of a contract, taking into consideration even the smallest details, including risk assessment in all its dimensions.

The main advantage outlined in favour of the concession contract is its length in time. Outside the concessions act, legislative amendments could be made, providing an opportunity for water intake from mineral sources for the purpose of bottling, with duration of the contract longer than the permissive regime, which is more restrictive with respect to the term of concession.

From the above considerations on the basis of the obtained results, a conclusion can be drawn that with little legislative amendments an acceptable and profitable solution can be achieved, leading to a more efficient utilization of the mineral waters and a better result for the state.

DISCUSSION

The discussion regarding the proposed legislative amendments draws the attention to the experts' assessment as to the degree of efficient use of the mineral waters in food industry. The continuation of the study of the market of bottled water should serve as an argument for the proposals for the necessary amendments to the statutory requirements for use of mineral waters. The legislative amendments may respond to the need of a new model of management and use of the mineral waters, facilitating the procedures for provision of rights of water intake from mineral sources – an exclusive state ownership.

For the more adequate use of this natural resource, which is not efficiently used according to the author's expert assessment, legislative amendments are necessary in order to contribute to its sustainable use in the food industry and for bottling. And the results of the study outline a positive tendency in the consumption of mineral waters, though with very slow rates.

RESEARCH LIMITATIONS

The main limitations in the study are:

- The scope of the subject of the study has been narrowed to the study of the mineral waters of 102 springs, exclusively owned by the state;
- The analysis of the production and consumption of mineral waters is limited to 10 years (2009-2018);
- The result of the statistical processing for 10 years has been applied in a perspective for 10 years' development;
- There are no summarized data on the production and consumption of mineral and other bottled waters for the country; data provided by the Association of the Soft Drink Producers in Bulgaria (ASDPB) have been used instead;
- The temporal and financial restrictions do not allow for the conduct of a representatve survey of producers and consumers of mineral and bottled waters. For the purpose of the survey, namely outlining of the market conduct of the bottled water consumer, a questionnaire has been carried out, providing an opportunity for analysis of the industry but it cannot be regarded as a representative abstract.

PRACTICAL CONSEQUENCES – APPLICATIONS IN PRACTICE

Practically applied contributions:

- A methodology has been developed and an empirical study was carried out for the purpose of finding the respondents' attitudes towards the use of the mineral waters for drinking purposes and their usage in the bottling industry, respectively. The obtained information sets out certain tendencies of behaviour of the consumers of bottled water.
- Information about the consumption of bottled water in Bulgaria has been statistically processed and analysed and was compared to data about the other member states of the European Union.
- The data were statistically processed using three possible future scenarios and the possible development trends were shown with regard to the bottling industry in Bulgaria under the different hypotheses.

- Main conclusions and findings were made about the applicability of the two currently effective legal figures.
- Calculations have been made under the current "Tariff on the water intake fees, for the use of water source and for pollution" and the possible income for the state have been calculated in case of utilization and sale on the market of the free mineral water resources depending on the purposes of use.

SOCIAL CONSEQUENCES – SOCIAL IMPACT

The use of mineral water and its influence on human health has been analysed. Mineral water provides a natural way of moisturising and extraction of various health beneficial substances depending on its composition. For the purpose of determining the extent to which the consumers make an informed choice in the use of one or another type of bottled water, a questionnaire was carried out with regard to the bottled water market, which shows specifications of the consumer behaviour towards the mineral waters and healthy habits of use.

The question as to the extent to which the consumers can make an informed choice based on convenience, taste and health benefits, is very important. In search of such answers a questionnaire was carried out in order to find out the consumer attitudes and the factors influencing their choice of use of water, including mineral water.

A pilot questionnaire was carried out in Plovdiv. 106 consumers from both sexes were questioned and the survey is not representative at this stage of the study. The target group includes consumers from different age groups, different social status and different income.

The tasks of the survey are connected with a description of the consumer attitudes for use of bottled water and determination the extent to which their choice is based on knowledge of the qualities and the influence of mineral water consumption on health.

In order to extract more information about the respondents' attitudes, 12 questions related to the use of bottled and other water, the knowledge of the qualities of the mineral waters and the possibility for their use for prophylactics and treatment

were included, as well as for the study of the relationship between the use of bottled water and the social status of the respondents.

When questioned about the main reasons for consumption of bottled water, 37% of the respondents indicate health reasons, which evidences their informed choice. When asked for the preferred bottled water, the respondents distribute almost evenly among those preferring mineral water (28%), spring water (32%) and all types of water (30%).

The summary of the results of the survey lead to the following conclusion: the mineral water may be determined as preferred for consumption by most Bulgarians in comparison to all bottled waters. Moreover, the consumption is informed with regard to its beneficial properties and influence on the human health002E.

CONCLUSION

The possibilities for development of the bottling industry are in the reform of the conditions of its functioning. The change may take effect after an introduction of a single bottling regime for all types of waters on the basis of long-term contracts, after inclusion of all necessary, inherent and risk expenses.

In search for theoretical arguments, the author finds potential in the application of the transactional approach to the economy of the mineral and energy resources. The economy of the transaction expenses is part of the research tradition of the new institutional economy. Its purpose is to analyse the economic organizations and to be a suitable assessment tool for one of the most important economic institutions – the companies, markets and mutually binding contractual relationships. The theory is based on the contractual attitude, therefore each question of the economic organization, which could be formulated as a problem of contracting, is interpreted from the point of view of the economization of the transaction expenses. Therefore the potential abilities of the theory of transaction expenses are very extensive [7].

Generally the transaction expenses are defined as the price of the time and information necessary for the conduct of the commercial exchange [6].

Naturally, the question arises to what extent the transaction expenses may increase the explanatory ability of the standard economic theory in their involvement in the formal modeling of economic processes and phenomena.

As a result of the survey, a conceptual model was proposed for rational utilization of the mineral waters and the main reason for directing the attention towards the abilities of the theory of the traditional expenses in the utilization of the mineral water is the application of the transaction approach in determining the concession component in the structure of the lease agreements for extraction of the underground resources.

The results of the calculated free resources of mineral water, the data on mineral waters with certificates from the Ministry of Health, the bottling possibilities and other objectives, are used. The results of the analysis of the mineral water market are taken into account, including analysis of competitors and perspectives. The data from the analysis of the mineral water demands are also reported.

The information is processed using statistical methods and the results outline the possible tendencies and different scenarios of development of the mineral water market in Bulgaria in the next ten years.

The results of the survey may contribute to the elaboration of a long-term programme for use of mineral waters for utilization of the resource stage by stage in the coming years and prognostication of the tendencies in the development of the bottling industry, for the consumption of the mineral waters.

All efforts are directed towards utilization of the mineral resource but there is more to be done for the achievement of the final goal – the more adequate use of the mineral waters in Bulgaria.

In this direction is the proposal for legislative amendments for the purpose of facilitating the inake regime of mineral waters for bottling purposes.

The substantiation of a conceptual model of rational utilization of mineral waters in the present study gives reasons and ends with the following conclusions:

1. The application of the transaction approach for determination of the transaction expenses in contracts for use of mineral resources/waters is possible.

2. The calculated opportunities for budget revenues by purposes of use of the mineral waters and under ideal hypotheses shows within what ranges the positive result would be achieved in the event of their adequate utilization.

3. Proposal for legislative amendments for the purpose of removal of the bottling use from the Concession Act – it was proven that only 2.75% of the total resource of mineral waters from the springs which are exclusively state ownership and 6.73% of the utilized resource are subjec of use in the food industry for bottling purposes.

4. A proposal for a change in the regime of mineral water intake for bottling purposes – establishment of long-term contracts with investors, while rendering into account all expenses, including risk factors and bound activities of the contracting parties for the achievement of maximum mutual benefits.

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SHEEP WOOL PRODUCTION STRATEGY ON FAMILY FARMS FOR VIRUS DESTRUCTION

Abstract. *The study deals with situational analysis and basic problems of production development as well as economic analysis in terms of production on two sheep farms in Serbia. The research included a small private farm in "Orljan", in the Nisava district, and a medium farm in "Drzanovac" in the Toplica district. During 2020, the volume and technology of meat and wool production were monitored on both farms, and the economic results were analyzed. During the observed period, it was determined that there were 150 merino sheep on the medium farm and 75 on the small farm.*
Keywords: *production planning, work processes, sheep wool, virus, price.*

INTRODUCTION

Serbian sheep breeding is mostly wide. In Serbia, the population of sheep is 80%, of which the most common are the following strains: Pirot, Svrljig, Sjenica, while the remaining 20%: sheep Cigaj, Wurttemberg and part of the merino. According to recent research, the body weight of a lamb is 3.5 kg at birth or 20 kg at the age of 90 days. Productivity in the population of other breeds is higher, but due to the small share in the total number of sheep, the effects are insignificant at the state level. In Serbia, the consumption of sheep meat is below 3.0 kg per capita. We belong to the order of European countries with the lowest consumption. It seems that the basic orientation of farmers in the production of sheep wool in Serbia. Planned crossbreeding and use of heterosis in the first (F1) generation to achieve better quality production of lamb, Cividini et al. (2012); Kukovic et al. (2013); Matsushita, et al. (2010); Momani, et al. (2010); Saatchi, et al. (2010); Yusup et al. (2017).

RESEARCH OBJECTIVE

The research was conducted on a family farm on farm A in Držanovac and farm B in Orljani. Both farms have a closed production cycle. In 2020, Farm A has

150 sheep and 200 lambs and Farm B has 75 sheep and 100 lambs. Farm A employs 2 people and 4 minors, and Farm B employs 2 people. Production costs for both households are based on natural indicators determined on the basis of a survey conducted in 2020 and all categories of variable costs in accordance with the production process. Material costs refer to the consumption of nutrients and drugs used in the production process. Depreciation costs in 2020 based on the norms of spatial space and equipment, we approach investment estimates, we estimate depreciation costs on the basis of which the categories of fixed costs are calculated. Production parameters were monitored: on farms A and B, food consumption on both farms per 1 kg per plant, total growth and food costs on both farms. The significance of the results in meat and wool production in 2020 was independently monitored on both farms during one research year, Archimede et al. (2008); Zaharia, et al. (2013); Zapletal, et al. (2010); Marina I. and Galina T. (2017).

MATERIALS AND METHODS

This condition greatly contribute to the conditions that exist in information enterprises. The largest number of information enterprises has its origins in the existence of capital and bank loans. On the other hand, the main motifs that dominate employment in information enterprises are increasing all forms of personal income, cash benefits and job security. In these areas, the prevailing belief that information profit enterprise nobody has any use. The consequence of such beliefs are sub-optimal results, even in companies that, according to the applicable criteria, classified a success. Just entrepreneur has the courage and ability to make money, manpower and intelligence advantage in a new way and make efficient for profit. At the same level of current theoretical analysis in the sphere of economy is a growing emphasis on the place and role of management in modern conditions. Term management of its contents significant because it represents a specific discipline that covers a broad range of processes and activities, the carrier and the implementers, the total knowledge and practice. Definitions of this concept are numerous and break, and on the other hand all the definitions only together provide a true picture of the contents of the management concept. Together for most of the famous definition of

management is indicating that the management process that occurs in all types of organizations, at all organizational leve lsinformation.

RESULTS AND DISCUSSION

The study of economic parameters of sheep wool production process was conducted on a medium-sized sheep farm A and a small sheep farm B. These farms have a closed production cycle, including the production of sheep wool, milk and lamb. Farm A has over 200 lambs per year and Farm B about 100 lambs. Fama A produces the most important nutrients for feeding cereals on 10 ha and Fama B on 5 ha. Farm A has two members and Farm B has one member. Based on the reporting of production processes on farms A and B, the price of materials is calculated, which includes the consumption of food, medicine, other materials and water. Most material costs are variable costs, Archimede et al. (2008). Achieved results: The average yield of corn on farm A is 6.5 t / ha. The total profit for 2 ha is 1,329.70 EUR, the profitability of production is 2.94 and the profitability of production is 19.40%. The average yield of triticale on the tested farm A is 5.0 t / ha. The total profit for 3 ha is 1,561.50 EUR, the profitability of production is 2.59 and the profitability of production is 159.17%. Achieved results: The average wheat yield on farm A is 5.0 t / ha. The total profit for 2 ha is 1,215.0 euros, the profitability of production is 2.86 and the profitability of production is 185.78%.

The average yield of barley on farm A was 4.0 t / ha. The total profit for 3 ha is 1,314.60 euros, the profitability of production is 2.34 and the profitability of production is 134.0%. Starting from the previously mentioned facts and characteristics of lamb meat and wool production, we analyzed both farms. In addition to theoretical explanation and application to general examples, we have shown the efficiency of optimal feeding for lambs raised on farms A and B. Also, the costs relate to the consumption of nutrients and drugs used in the production process, as well as depreciation of livestock, existing space and equipment performed on the basis of norms. When calculating the price of the mixture from own produced grain for rearing lambs on farms A and B, the price of all products, calculated in tons (t), was taken into account. In 2020, two farms in Serbia were monitored, Table 1.

Table 1. Economy of lamb and wool production on sheep farms A and B for 2020

Elements	FARMA A	FARMA B
Number of sheep on farms	*150*	*75*
PRODUCT VOLUME		
Total volume	*6.750*	*3.375*
Slaughter of sheep	*45*	*45*
INCOME		
1. Sheep's wool	*2.250*	*1125*
2. Milk stimuli	*0*	*0*
3. Incentive	*3.000*	*1.500*
4. Jgadad for sale	*13.500*	*6.750*
5. Offspring of the herd	*2.250*	*1.125*
6. Milk	*9.000*	*4.500*
7. Other	*3.000*	*1.500*
8. Repair of sheep	*6.000*	*3.000*
A. Total income	*38.970*	*19.485*
COSTS		
1. Food	*12.000*	*6.000*
2. Veterinary services and medicines	*750*	*75*
3. He will die	*1.500*	*750*
4. Work	*4.500*	*2.250*
5. Energy and fuel	*1.500*	*750*
6. Depreciation of herds and equipment	*1.000*	*500*
7. Other	*800*	*400*
B. Total costs	*22.050*	*11.025*
INCOME / LOSS		
C. On the farm	*16.920*	*8.460*
1. By the throat	*112,80*	*112,79*
2. Economics of production A: B	*1,77*	*1,76*
3. Production profitability C: Ax100	*43,42%*	*43,41%*

Source: Authors' field research for 2020

Based on the presented results for 2020, we can conclude that the strategic production of meat and wool on farms A and B is economically justified. The results shown in Table 1 show that both farms earn on the farm, and above all that human labor is not charged at the price of labor. Most of the work is done by family members (children) younger than 10-12 years, which makes production cheaper.

CONCLUSION

Serbian sheep breeding is mostly fragmented and insufficiently organized. The body weight at birth of lambs is about 3.5 kg, or about 20 kg at the age of 90 days. Consumption of lamb meat in Serbia per capita is below 3.0 kg. The best way to increase production is to use sheep breeding methods. This method uses the effects of additive genes through heterosis and the effects of non-additive genes through

complementarity. In addition, in addition to the genotype, the crossbreeding system also plays a decisive role. The average body weight of the lamb from the triple cross was over 13 kg . Sheep wool products do not allow the life of viruses, bacteria and mites. The total income for 2020 on farm A is EUR 16,920, and on farm B EUR 8,460.

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MONEY, FINANCE AND CREDIT

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INTERNATIONAL RISKS AS PART OF NON- LIFE RISKS AND COMMERCIAL INSURANCE COMPANIES BEFORE THE PANDEMIC COVID -19 ON THE SLOVAK REPUBLIC

Abstract. *The paper deals with international risks as part non-life insurance and commercial insurance companies before the pandemic COVID -19 on the Slovak.International risks are classified in the third chapter; international risks are subdivided in the paper into commercial or trade risks, political and economic risks and special types of risks. Each group of risks is described and exemplified. The fourth, final of the paper focuses on the international risks insurance and contains a table depicting the total technical premium and technical premium in non-life insurance in commercial insurance companies in the Slovak Republic as at 31 December 2019 in thousand Euros.*

Keywords: *non-life insurance, classification of international risks, commercial insurance market, commercial insurance companies, indicators of the commercial insurance market*.

Introduction

Insurance and the insurance industry extend directly or indirectly to all areas of human activities, and so they affect each firm, enterprise, citizen, entire society; all the changes in society are reflected in some way also in insurance activity. Development of science, technology and culture brings to the market new modern products, new activities, and thus also new risks. Enterprises and businesspeople, citizens, state, as well as insurance companies have to take into consideration and calculate with these risks. Consequently, commercial insurance companies have to constantly prepare new insurance products related to life and non-life risks for the commercial insurance market and simultaneously monitor the development in the entire economy (e.g. GDP development, unemployment growth, inflation, growth of prices, movement of money/pecuniary incomes, demographic data, and other macro-economic and micro-economic indicators).

Description of Non-life Risks

Non-life insurance is an insurance that includes a broad range of risk of non-life type. In the literature, we can find various definitions of the essence of non-life insurance.

Non-life risks can be divided into four groups: The first group includes risks that present danger to health and lives of persons – e.g. accident (casualty), illness,

disability, and the like. The second group includes risks that cause financial losses – credit risks, legal risks, risks of financial losses, liability risks and the like. The third group contains risks producing direct material losses – elemental risks, theft, vandalism, and the like. The fourth group includes international risks. Non-life insurance is short-term, i.e. the insurance contract is closed for an indefinite duration with a yearly insurance period, or one that is shorter than a year in contrast to life insurance contracts which are long-term and are closed for a definite duration. The insurance contract constitutes a bilateral legal document, which is a basis of contractual relation between the insurer and the insurant. In it, the insurer pledges to provide within a negotiated extent the insurance premium, if an accidental insurance event arises, which is stipulated in the insurance contract, and the insurant takes a pledge to pay the insurance premium.

Description of international risks as part of non-life risks

Economic relations arising between two or more states bring a lot of new risks but also the opportunities of forecasting, reducing, and eliminating them. Many of these risks pass from one state into another, e.g. price fluctuations, inflation development, and the like. On the other hand, some risks enable to refrain from and eliminate numerous difficulties of a different kind, e.g. import of shortage raw materials and materials, thus supporting the development of production while enabling the expansion of exports and the like.

In professional foreign and domestic sources available, we encounter with the classification of international risks as part of non-life risks in the area of non-life insurance, which are connected with international commercial relations. We understand the concept of international risks as the risks arising outside the territory of a given state.

The problems of international risks are extensive and comprehensive in terms of diversification of the cases in terms of export, re-export or import; from numerous aspects, including commercial, legal, technical, banking and financial ones, as well as from broader political and economic connections.

The most frequent classification is that into three groups of international risks, the focus will be on them in the present paper, namely: commercial risks, political and economic risks, and other types of risks.

Classification of International Risks as Part of Non-life Risks

International risks are classified in non-life risks. International risks are divided into commercial or trade (financial) risks, political and economic risks and special types of risks.

Description and classification of commercial risks

Commercial risks create a system of larger and smaller risks, relating to mainly trade-and-finance transfers.

The intensity of commercial risks is stronger in external relations than in internal economy of countries, mainly due to the following reasons:

1. Difference in mentalities accompanied with a limited communicative competence, but also with difficulties in searching for new markets.

2. anguage barriers involve the danger of misunderstanding or wrong interpretations in closing contracts, which may result in negative consequences.

3. Differences in legal systems may lead to the situation when the contract is interpreted according to the law and commercial usage of the exporter as well as the importer. Awards of the courts concerned are hard to enforce abroad and may be more expensive than the subject-matter of the dispute.

4. A larger distance between contractual parties, which results in less mutual knowledge, worse orientation in a foreign market, and also in a higher transportation risk.

5. Commercial risks in contractual relations ensue from the danger that the foreign partner fails to adhere to the contract closed either because it is not willing to do so, or because the party concerned is unable to stand by the contract. The inability of the partner to fulfil commitments resulting from the contract is, as a rule, caused by the change in the economic position or in an unrealistic estimate of their economic possibilities.

The intensity of the impact of commercial risks on individual operations abroad is, in general, given by two factors:

a) The first factor is the partner's reliability – it is possible to assess the legal position of the partner from this aspect, the partner's proprietary condition, commercial efficiency, technical and economic conditions of fulfilling the commitment, and the like.

b) The second factor is a degree of legal protection of a given contractual relation – it is as a rule the case of legal perfection of the contract, its terms and conditions, the law according to which the legal relation is assessed, character of sanctions for non-fulfilment of the contract.

Commercial risks are kinds of risks, which can affect the results achieved mainly in the negative direction. They are one of the few kinds of risks in which the protection can be applied via their minimisation. These risks are influenced by the quality of work of entities in the sphere of foreign economic relations, their ability to appraise risks and choose suitable ways of their restriction. Commercial risks can be divided into: market risk, risk of the failure to take over the goods, risk of non-payment (default risk), commodity risk, and transportation risk. Commercial insurance companies offer a broad scale of insurance products to individual entities of the national economy for the coverage of commercial risks.

Description and classification of political and economic risks

Political risks ensue from an overall political, economic and financial situation of the country to into which exports directed.

The concept of political risk is in general connected with an immediate threat to profit; in extreme cases it also involves the danger of the economic existence of foreign companies, or even also international enterprises. The reasons for the rise of political risks result from changes in the political environment of an enterprise. They are materialized by means of measures adopted by the state, and these mean for the exporter the risk of non-ratification or cancellation of the contract, embargo of export, non-performance of foreign exchange transfer, confiscation of materials and products, and the like.

From the broadest perspective, this risk results from hostile activities, e.g. war, revolution, strikes, commotions, civil wars, etc. Political and economic risks in international trade can no longer be considered to be external risks. These risks

cannot be generally underrated. It is necessary to the calculation of the deal. An immense indebtedness of the developing world, extensive financial insolvency, international debt crisis, dangerous and explosive situation in many world regions, all these factors just strengthen and emphasize the necessity to decrease political and economic risks.

Political and economic risks are classified into the following kinds:

a) Exchange risk – the money that the importer has already paid at their bank cannot be (temporarily) exchanged for any other foreign currency as a result of government measures of an importing country as well as due to shortage of foreign exchange.

b) Moratorium – settlement and transfer of the amount due to the exporter will not be permitted by the state at the time of debt maturity, but will allow only partial payment of the debt, or the deferral of payment will be directed.

c) Transfer risk – the money paid by the importer at the bank cannot be (partially or completely) transferred abroad, because the importing country refuses to permit this kind of transfer for economic and political reasons.

The risk of transfer involves the danger of a complete or partial restriction of the transfer of profit, material goods, know-how, licence fees, payment for services s well as of capital.

The risk of transfer is currently becoming one of the greatest risks for international financial institutes and banks. Transfer risks usually include: a country's financial insolvency and risk of obstacles to trade.

Special kinds of risks as part of international risks

Special kinds of risks constitute a separate group of international risks. This group includes the following risks: exchange rate risk, risks of interest rate fluctuation, inflation risk, legal risk, foreign investment risks, natural and technical disasters/catastrophes, risks of terrorist attacks, and specific risks. We can include the following risks in the group of specific risks: specific risks of certainty, safety, covering events that present danger to our health, freedom, and life of employees of international companies and institutions, as well as of family members, and apprehensions to the future. Everyday reality persuades us about a rising "capability"

of man or a group of people who have to nationalistic, ideological, religious, sectarian, or even terrorist inclinations, who pose a threat to not only property but also health and lives of innocent people. A rising number of terrorist attacks on the threshold of the millennium cannot leave calm all peace-loving people on this planet. We can mention also more severe attacks, e.g. attack in the United States in 2001, or in Spain in the year 2004, and other terrorist attacks mainly in the US, Great Britain as well as in third countries.

Insurance of International Risks as Part of Non-life Risks on the Slovak Commercial Market

On the Slovak commercial insurance market, the insurance of international risks as part of non-life insurance belongs to the province of commercial insurance companies, which are associated in the Slovak Association of Insurers.

Table 1. Technical insurance premium in life insurance and technical insurance premium in non life insurance as at 31 December 2019 / in thousand of Euros

No.	Commercial insurance company	life insurance	non-life insurance
1	AEGON Životná poisťovňa, a. s. /Insurance company	52,336	0
2	Allianz – Slovenská poisťovňa, a.s./ Insurance company	239,494	406,408
3	ČSOB Poisťovňa, a. s. / Insurance company	42,624	48,628
4	ERGO Životná poisťovńa, a .s./Insurance company	2,824	1,155
5	Generali Slovensko poisťovňa, a. s./Insurance comnpany	107,676	153,285
6	NN Životná poisťovňa, a. s./ Insurance company	75,644	0
7	KOMUNÁLNA poisťovňa, a.s.VIG/ Insurance company	88,403	79,134
8	KOOPERATIVA poisťovňa, a. s., VIG/Insurance company	356,987	277,267
9	BNP PARIBAS/Insurance company	12,132	20,386
10	Poštová banka /Insurance company	15,155	1,789
11	UNION poisťovňa, a. s./ Insurance company	8,895	53,373
12	UNIQA poisťovňa, a. s./Insurance company	30,970	95,191
13	Wüstenrot poisťovňa, a. s../Insurance company	26,837	28,151
14	AXA, poisťovňa, a. s./Insurance company	56,927	21,166
16	Groupama, poisťovňa a. s./ Insurance company	1,927	10,041
17	Youplus Insurance International, AG.		3,659
	Total	**1 303 272**	**1 272 410**

Source: Internal materials, SAP, Bratislava 2020, www.slaspo.sk

Numerous commercial insurance companies operate on the commercial insurance market in advanced economies. Each of them participates in this market with a different offer of insurance products and attempts to cover the largest possible space (insurance field). As at 31 December 2019 as mentioned before, as many as twenty-one commercial insurance companies operated on the Slovak insurance market; all of them were associated in the Slovak Association of Insurers and recorded technical insurance premium indicators as shown in Table 1.

(Table 1: Technical insurance premium in life insurance and technical insurance premium in non-life insurance as at 31 December 2019 in thousand of Euros). Commercial insurance companies offering insurance products in the area of international risks participated in non-life insurance with the following data.

The total of technical insurance premium for all insurance products in the year 2019 was 2,575,682 thousand Euros. Table 1 entitled "Technical Premium in life and in non-life insurance in commercial insurance companies as at 31 December 2019 in thousand €" shows also the succession of commercial insurance companies on the Slovak insurance market in the year 2019. The primacy in non-life insurance on the Slovak insurance market was held by Allianz–Slovenská poisťovňa, a.s., with 34.51%, which accounted for 406,408 thousand Euros. The second place was occupied by KOOPERATÍVA insurance company, a.s., VIG in non-life insurance with 26.43%, which accounted for 277,267 thousand Euros, and the third place in non-life insurance by Generali Slovensko, insurance company, a.s. with 9.91%, which is equal to 153,285 thousand Euros.

Insurance products designed for insuring international risks belong in the area of non-life insurance. The insurance company Allianz–Slovenská poisťovňa, a. s. has the widest offer of insurance products designed for the insurance of international risks.

The most important insurance products in the area of international risks offered by commercial insurance companies on the commercial insurance market are: transportation insurance (insurance of international transportation of consignments), insurance of investment unit (building and assembly insurance), insurance of exhibitions and fairs, product liability insurance, insurance of international road

carrier, motor hull insurance for travel abroad, aircraft operation insurance and special risks insurance. Special risks include mainly: insurance of equipment of nuclear industry and of allied perils, export credit insurance, insurance of caution money, insurance of early delivery of goods to a foreign buyer, and insurance of shipping charges.

Another group, which we classify in the area of international risks relate to insurance of persons, namely: insurance of tourist risks, tourism insurance, insurance of medical expenses incurred abroad and the like.

Conclusions

In connection with the insurance of international risks, as part of non-life risks, it has to be mentioned that commercial insurance companies on the Slovak insurance market do not offer some insurance, which are in used in European Union countries, in particular in Great Britain, Germany and France, and in the entire advanced world, mainly in Japan and in the United States of America. They are in particular insurance products from the area of commercial risks /e.g. banking and financial risks/and also insurance products that belong to the special kinds of risks/e.g. natural catastrophes risks, pandemic risks, and technical risks/. Insurance producs designet for insuring risks belong in the area of non-life insurance. The insurance company Allianz-Slovenská Poisťovňa, a.s. Insurance company has the widest offered bz commercial insurance products designed for the insurance of international risks. The primary in non-life insurance market in the year 2019 was held by Allianz-Slovenská poisťovňa, a.s., Insurance company with 34,51% accounted for 406,408 thousand Euros.

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COVID-19 AND ELECTRONIC BANKING IN ALBANIA

Abstract. *The Covid-19 pandemic affected many sectors including the banking sector. For this reason the banking sector undertook many new initiatives to provide facilities for customers with the help of information technology. The study aims to study the reasons and benefits of using e-banking services as well as problems faced by customers in accessing these services during Covid-19. The study is based on primary data collected from the administration of 310 questionnaires completed by e-banking customers. The data were analyzed based on statistical methods, where it was found that 24/7 banking followed by transaction speed, convenience, ease of use, security and time savings are the main reasons for using e-banking services. The most important benefits are the payment of bills, the transfer of funds followed by the ease of withdrawing money and electronic purchases. 61% of respondents are satisfied with the ATM service, while 55% and 62% are very satisfied with the internet banking and mobile banking service. Reliability analysis shows that ATM services are very reliable with a maximum number of respondents of 54%, followed by internet banking with 52% and mobile banking with 40% of respondents.*
Keywords: *Covid-19, ATM, internet banking, mobile banking*

INTRODUCTION

In March 2020, the Covid-19 pandemic had spread to most European countries, including Albania. The governments of these countries impose strict restrictive measures to reduce the spread of the virus. Social distancing caused economic problems in all countries, indicating the urgent need for change in various sectors of the economy around the world including the banking sector. In Albania (as in many countries) the pandemic has forced consumers to carry out their banking transactions remotely, ie without any direct contact with the bank counters. Albanian consumers, despite the changes from year to year, have had a low level of familiarity with electronic banking and thus the banking system has needed to create or restructure existing electronic products and services as well as to promote new products and services. For Albanian banks it becomes necessary in pandemic periods to facilitate transactions without contact with the bank based on consumer perception. Moreover, their use should be maintained even after Covid-19 has passed.

Various studies have shown that electronic banking, including all its channels, has an advantage over traditional banking that leads to increased customer satisfaction of a bank, for example, saving money, saving time, providing fast transactions or by executing those transactions without having to visit the bank

(Altobishi et al, 2018; Hammoud et al, 2018; Howcroft et al, 2002; Malviya et al, 2014; Uddin & Ahmmed 2018). People use e-banking services for two reasons, firstly to maintain social distance and, secondly to make transactions during lock down and quarantine.

LITERATURE REVIEW

The management of the Covid-19 pandemic necessitates the adoption of social distance norms and healthy behaviors. For the purpose of consumer protection WHO (2020) recommends the replacement of cash, debit and credit cards and touch screen terminals with contactless technology.

Vij et.al (2014) has found that electronic banking is considered to have a significant impact on the performance of banks. The main reason for success is that it can offer various benefits, both to customers and to the banking system. It can provide a large number of choices as to the channels they can use to conduct their business and their convenience regarding location and when they could use e-banking. Mathivanan & Kavitha (2015) found that e-banking is an essential weapon for users' survival. Mouse click offers different types of banking services to customers at a lower cost and gives them freedom in choosing financial services. They found that banks need to update and think about new personalized packages and services to stay competitive.

Various studies have been conducted on the factors that push consumers to use electronic banking. Demographic and personal characteristics of individuals are factors that influence the use and adoption of electronic banking. The age of individuals is a special indicator for the adoption of such banking services, young people have a preference for these services, in contrast to the older generations who prefer to visit a physical bank branch (Howcroft et al, 2002; Kolodinsky et al , 2004). Mobile banking is mainly used by young people up to 35 years old, while the positive effect of income on the adoption of these services seems to be negligible (Laforet & Li 2005, Mattila et al, 2003). The technological background turns out to be also a factor in accepting or preventing the use of this service. Familiarizing people with computers and their applications, such as managing their email accounts, can not only form a positive attitude towards these services (Karjalotuo et al, 2002), but also affect

their belief that usage improves the efficiency of their financial transactions (Harrison et al, 2014; Papazoglou & Papathanasiou, (2018). Managing and familiarizing an individual with banking products / services also has an impact on the adoption of electronic banking, as bank customers who widely use various banking products, such as credit / debit cards, are more likely to become internet banking users (Berger & Gensler, 2007; Laforet & Li, 2005; Szopiński, 2016).

STUDY OBJECTIVES

This study has the following objectives:

1. To analyze the reasons and benefits of using e-banking services during Covid-19.

2. Examine the problems faced by customers when using e-banking services and their frequency.

3. Understand customer satisfaction and trust in e-banking services during Covid-19.

RESEARCH METHODOLOGY

The study is based on primary and secondary data.

Data collection: Analysis is a process that begins with data collection. Primary data were collected through a questionnaire, with the help of Google Forms since it was period during Covid-19. It was sent to bank customers, via Facebook, WhatsApp and E-mail. The questionnaire consisted of two parts: (i) personal and demographic characteristics (ii) questions about the use of electronic banking during the Covid-19 pandemic period.

345 completed questionnaires were received and evaluating the validity of the questionnaire, only 310 questionnaires were fully completed (n = 310). So the percentage of validity of the questionnaires turned out to be about 90%. Thus, 310 fully completed questionnaires were considered for analysis. Data management is realized in two phases. The first phase consists of clearing and throwing data into Excel from Google response formats and the second phase, analyzing the data.

Data analysis methods

Our study has a two-dimensional character: descriptive and exploratory. The basic method of work is that of analysis and synthesis. Primary data were used for the realization of this work.

Literature review is an important part of the paper. Studies and academic research of Albanian and foreign authors, published in scientific journals in Albania and abroad, the texts of authors, mainly foreign, are the basis of this part of the research. Based on statistical methods, the survey data was processed and the relevant conclusions were drawn.

ANALYSIS AND FINDINGS

Sample analysis showed that most of the sample seemed to have somewhat good computer knowledge. Also 56.8% of the sample were women, while the average age was 36.18 years. A significant portion of the sample of 45.9% had a university education, while 16.2% of them were unemployed. In terms of marital status, most of the sample was married, while monthly income scores seemed more balanced.

Table 1. Number of years with the bank

Period	Frequency (Yes)	Percent
Less than 1 year	47	15.2
1 Year - 3 Years	42	13.5
3 Years - 5 Years	79	25.5
5 Years - 7 Years	52	16.8
More than 7 Years	90	29.0
Total	**310**	**100**

Source:Primary Data

Table 1 shows how long respondents conducted transactions with banks. A large number of respondents (29.0%) have maintained a relationship with banks for more than seven years and 25.5% of them have maintained a relationship between 3 to 5 years. In order to maintain a long-term relationship with customers, banks must offer innovative banking products, credit cards, online banking, ATMs, mobile banking, PC banking, etc.

Table 2. Do you feel insecure visiting the Bank during Covid-19

Use of e-banking services	Frequency	Percent
Yes	270	87.1
No	40	12.9
Total	**310**	**100**

Source: Primary Data

Table 2 presents the uncertainty of respondents to visit the bank during the pandemic period. The results show that a large number of respondents 87.1% feel unsafe to visit the bank because of the risk posed by physical contact during the pandemic period. For this reason customers are moving towards using e-banking services instead of traditional banking services.

Table 3. Period of using E-banking Services

Period of use	ATM	Internet Banking	Mobile Banking
Less than 1 Year	22(7%)	46(18%)	76(36%)
1 Year to 2 Years	34(11%)	36(14%)	44(21%)
2 Year to 3 Years	40(13%)	56(22%)	38(18%)
More than 3 Years	214(69%)	117(46%)	52(25%)
Total	**310(100%)**	**255(100%)**	**210(100)**

Source: Primary Data

Table 3 presents the use of ATMs, Internet Banking and Mobile Banking in relation to the length of time the respondents are using a particular service. For this purpose, time is divided into four subdivisions, less into 1 year, 1 to 2 years, 2 to 3 years and more than 3 years. The results show that ATM is the oldest service in use. Of the total respondents, 69% of respondents use it for more than 3 years. Internet banking and mobile banking are in the second and third position with 46% and 25% of users, respectively.

Table 4. Reasons for using E-banking Services during Covid-19

Reasons for using e-banking	Frequency (Yes)	Percent	Frequency (No)	Percent
24/7 banking	276	89	34	11
Convenience	217	70	93	30
Ease of use	205	66	105	34
Speed of transactions	220	71	90	29
Saving time	192	62	118	38
Fast information	158	51	152	49
Remote access	177	57	133	43
Security	195	63	115	37

Source: Primary Data

The reasons for using e-banking services have also been examined to find a clear picture regarding the use of e-banking. Table 4 shows that 24/7 (89%) banking followed by transaction speed (71%), convenience (70%), ease of use (66%), security (63%), time saving (62%) , remote access (57%) and fast information (51%) are the main reasons for using e-banking services.

Table 5. Benefits of using E-banking services during Covid-19

Benefits of using e-banking	Frequency Yes	Percent	Frequency No	Percent
Transferimi i fondeve	273	88	37	12
Kontrolli i gjendes se parave	205	66	105	34
Lehtesia ne terheqjen e parave	270	87	40	13
Pagimi i faturave	276	89	34	11
Marrja e informacionit mbi bankat	127	41	183	59
E –shopping	214	69	96	31

Source: Primary Data

Table 5 presents the benefits of using e-banking services. The table shows that the payment of bills (89%), the transfer of funds (88%) followed by the ease of withdrawing money (87%) and electronic purchases (69%) are the most important benefits of respondents from using the services of e-banking. Other benefits include cash flow control (66%) and online information retrieval (41%). So, the more benefits customers receive from services, the more quality improves and also the probability of customer satisfaction increases.

Table 6. Operational problems in using e-banking services during Covid-19

Operational problems	Frequency	Percent
ATM malfunction	60	19.4
Delays in service	58	18.7
Untrained staff	29	9.3
No answer to calls	47	15.2
Security threat	45	14.5
Server malfunction	71	22.9
Total	**310**	**100**

Source: Primary Data

Table 6 presents the nature of the problem faced by respondents when using e-banking. The main problem is related to server malfunction (22.9%) followed by ATM malfunction (19.4%), service delay (18.7%), and problems due to non-receipt of telephone calls by bank employees (15.2 %). Respondents say the bank's ATMs

either do not function properly or lack cash in it. Further 14.15% perceive that they are facing security threat and 9.3% due to untrained staff in the organization.

Table 7. Frequency of encountering problems in the use of E-banking during Covid-19

Frequency of encountering problems	ATM	Internet Banking	Mobile Banking
Often	12(4%)	31(12%)	27(13%)
Sometimes	53(17%)	43(17%)	36(17%)
Rarely	93(30%)	51(20%)	99(47%)
Never	152(49%)	130(51%)	48(23%)
Total	**310(100%)**	**255(100%)**	**210(100%)**

Source: Primary Data

Table 8 shows the frequency with which customers have encountered problems with their banks, where 51% of respondents have never had problems with internet banking. The table also shows the position of ATMs in this context where this percentage is 49%. In the case of mobile banking, this percentage is lower 23%.

Table 8. Reliability of E-banking services

Reliability of services	ATM	Internet Banking	Mobile Banking
Very reliable	167(54%)	132(52%)	84(40%)
Reliable	115(37%)	87(34%)	76(36%)
Unreliable	28(9%)	36(14%)	50(24%)
Total	**310(100%)**	**255(100%)**	**210(100%)**

Source: Primary Data

Reliability of e-banking services is another dimension, which is analyzed based on three parameters, highly reliable, trustworthy and unreliable. Table 8 shows that ATM services are very reliable with the maximum number of respondents (54%), followed by internet banking with 52%. While unreliability is maximum with 24% in the case of Mobile banking followed by internet banking with 14% of respondents.

Table 9. Overall satisfaction after using E-banking services

Satisfaction level	ATM	Internet Banking	Mobile Banking
Highly satisfied	102(33%)	140(55%)	130(62%)
Satisfied	189(61%)	92(36%)	65(31%)
Unsatisfied	19(6%)	23(9%)	15(7%)
Total	**310(100%)**	**255(100%)**	**210(100%)**

Source: Primary Data

The level of satisfaction after using a particular service was also examined based on three parameters, highly satisfied, satisfied and dissatisfied. Table 9 presents

the level of satisfaction, which is the highest in the case of mobile banking with 62%, followed by internet banking with 55%. The table also shows that the level of dissatisfaction is highest in the case of internet banking with 9% of respondents.

CONCLUSIONS

The Covid-19 pandemic affected many sectors including the banking sector. For this reason the banking sector undertook many new initiatives to provide facilities for customers with the help of information technology. 24/7 banking followed by transaction speed, convenience, ease of use, security and time savings are the main reasons for using e-banking services. The most important benefits that respondents have from using e-banking services are the payment of bills, the transfer of funds followed by the ease of withdrawing money and electronic purchases. 61% of respondents are satisfied with the ATM service, while 55% and 62% are very satisfied with the internet banking and mobile banking service. Reliability analysis shows that ATM services are very reliable with the maximum number of respondents (54%), followed by internet banking with 52% and mobile banking with 40% of respondents.

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REGULATORY CAPITAL AND PROFITABILITY OF BANKS IN KOSOVO

Abstract. *Domestic and foreign regulators regulate regulatory capital, which is one of the most important banking factors. The focus is on the Central Bank of Kosovo's (CBK) capital legal requirements and how they affect the banking system's performance. Banks are heavily leveraged, and if needed capital is insufficiently supplied by the market, bank risk might rise, even if the bank fails. Capital is necessary for solvency and protection against unanticipated actions that arise as a result of banking liquidity and credit risks. Kosovo's banking industry is characterized by middle-sized banks that are primarily funded by primary deposits and have good capital and liquidity levels. The legislative framework and capital adequacy ratio requirements for banks are discussed in this study. The paper will also look at the relationship between capital sufficiency and bank performance.*

The research covers the years 2013 to 2019 and includes 10 licensed and operational banks in the Kosovo financial sector. Kosovo's banking sector has a high asset quality portfolio and a low level of non-performing loans (NPLs), signifying one of the most stable banking sectors in the area. The findings of the study suggest that capital has a favorable association with the banking industry's performance.

Keywords: *capital adequacy requirements, capital adequacy ratios, profitability, ROAA, ROAE*

Introduction

Over the previous two decades, the banking business in Kosovo has grown dramatically. Its total assets recently reached roughly 4.8 billion euro, with an annual growth rate of more than 10% last year. The banking sector must operate in accordance with domestic and international regulatory (credit, capital, and liquidity) criteria as part of its continuing operations. Internal or bank-specific variables, as well as other external variables, impact the banking industry's profitability. Internal variables have an impact on external variables, and vice versa; this means that issues like liquidity risk, capital adequacy, credit risk, and so on will have an impact on the banking industry's profitability and influence a country's economic growth, either directly or indirectly. As a result of the failure to achieve profitability, bank solvency would suffer and capital would be eroded.

For bank regulators, the legislative criteria for bank capital adequacy are of paramount importance. For bank license and operations, the capital of the bank is considered a sine qua non. The capital component is designed to protect against both expected and unforeseen losses. If capital adequacy ratios do not meet regulatory

criteria, regulatory authorities will be forced to take various legal steps mandated by the statute. Many banks went insolvent as a result of failing to meet capital requirements and being unable to withstand possible asset losses. Regulators and experts have focused a lot of attention on this failure to manage capital standards in order to sustain capital sufficiency requirements. Regulators' interest has been noticeable, especially in times of major financial crises. To prevent bank collapses and protect depositors' interests, active banks are required by law to maintain a minimum capital adequacy ratio of 8% of their risk-weighted assets. Because of the importance of capital, Basel committees on bank supervision were compelled to establish internationally recognized capital requirements and credit risk measures. Banking authorities must guarantee that risk exposures are backed by a sufficient amount of high-quality capital that can absorb continuous hazards.

The capital adequacy ratio is analyzed based on yearly data from 2013 until 2019. This paper attempt contributes to Kosovo banking literature, to analyze and disclose regulation regarding capital requirements issued by the Central Bank of the Republic of Kosovo.

Meanwhile, the banking industry had a growth trend on total assets that reached 5.3 billion in 2019 which grew higher than 50 % compared to 2013. The deposits in 2019 reached 3.9 billion EUR while loans amounted to 3.1 billion EUR in 2019. All banks in Kosovo are subject to Law on Banks, Microfinance Institutions and non-Bank Financial Institutions and Regulation on bank Capital Adequacy that regulates financial activities and capital adequacy.

Literature Review

The subject of capital adequacy has caught the attention of many financial players, and the reasons for national and international regulators' acceptance and implementation of capital adequacy are being investigated in continuity.

Although there are many facts that support bank regulation and supervision in theory, the question of whether and how much the banking sector should be controlled has become contentious. Kevin Dowd (1993) compares it to widely accepted free commerce and wonders why the laissez-faire method cannot be applied to banks as well. Dowd concludes that without a lender of last resort or government

assurances, the market would self-regulate and penalize depositors. Dowd contends that, despite its high cost, increased capitalization makes a bank safer and more appealing to its depositors. As a result of the competition among banks, the most suited to the consumers need a level of capitalization. Market forces would decide the exact quantity of capital.

Sheila Dow (1996), who represents the other viewpoint, identifies two fundamental grounds for a controlled financial sector. Dow says that free banking is subject to high cyclicality and that banks authorities would inevitably interfere, making laissez-faire ineffective (Dowd, 1996). Her argument is based on "the extremely particular economic role of money and the uncertainty that it entails." Bank institutions, unlike businesses, utilize their obligations as money, and the goal of the law is to "guarantee that the bank's assets preserve adequate liquidity to cover any drop in redeposit, and to prevent such a drop in the first place. Dow argues in her paper "Why the Banking System Should Be Regulated" that "regulation is needed because bank liabilities' moneyness is a public good." The state, in turn, "produces moneyness" by instilling faith in money's ability to hold its worth (Dow, 1996).

The International Monetary Fund responded to the Asian crisis in 1997 by promoting global financial and national market stability. Reynolds, Ratanakomut, and Gander (2000) investigated the financial structure and performance of eight East and Southeast Asian nations from 1987 to 1997 in order to find evidence on the impact of bank governance in the 1997 financial crisis. Loan preference ratios and capital ratios were both higher during financial liberalization, presumably signaling increased risk. As management size develops, capital adequacy declines, then rises, yet profitability declines, highlighting diminishing returns.

Lin, Penm, Gong, and Chang (2004) looked at the index of insolvency risk to failure risk in Taiwan's banking industry from 1993 to 2000 to see what impacts there were before and after the capital adequacy legislation was revised (at the end of 1998). According to the findings, capital adequacy and the insolvency risk index have a positive association. It also revealed that there is a notable positive association between capital sufficiency and other financial outcomes. According to Kleff and Weber (2008), the level of capital is positively connected with bank profitability.

Profit accumulation leads to a higher degree of capital expansion. Ahmad et al. (2012)'s findings, on the other hand, contradict those of others. According to a study done in the Malaysian banking sector, earnings have a negative impact on the capital ratio. Deposits, GDP growth rate, portfolio risks, and profitability were used by Bokhari and Ali (2009) to investigate the drivers of bank capital adequacy ratio in Pakistan. It concluded that profitability as measured by ROE has a negative significant influence on capital ratio, and that deposits, portfolio risks, and GDP all have a negative significant influence on capital adequacy ratio.

Roman and Sargu (2014) evaluated the impact of financial indicators for capital adequacy, assets quality, management quality, and profitability on liquidity risk in Romanian and Bulgarian banks operating in the context of EU membership between 2003 and 2011. The capital adequacy ratio and the ratio of impaired loans to gross loans have statistically significant effects on liquidity risk, according to the findings.

Capraru and Ihnatov (2014) conducted another study in the context of the main determinants of bank profitability in CEE countries Romania, Poland, Czech Republic, Bulgaria, and Hungary, using a proxy for profitability return on average equity, return on average assets, and net interest margin as a proxy for profitability. The empirical findings are consistent with the predicted outcomes, according to the study, and management efficiency and capital adequacy growth impact bank profitability for all metrics, but credit risk and inflation only effect ROAA and ROAE. Banks with a greater degree of capital adequacy are more profitable, according to further research.

The Basel III Directive stipulates that a bank's capital adequacy ratio must be at least 10.5 percent at the conclusion of the term. Some scientists advocate for a larger percentage ratio in this area. Hellwing (2010) advises that banks' capital ratios be increased far over 10%, as a result of some undervalued assets. According to Miles et al. (2012), appropriate capital needs for capital assets should be between 16 and 20 percent, depending on the risks involved.

Methodology and Data Analysis

Comparative study of financial indicators and capital adequacy measures had been used to demonstrate trends and evaluate changes in profitability and capital adequacy from 2013 to 2019.

Kosovo continues to have a stable financial system, which is a key source of domestic economic growth and stability. All of the financial system's core sectors increased their activity, allowing the country's economy to provide a diverse variety of financial goods. Bank financing conditions continued to improve, with access to bank loans being supported by more services in addition to lower interest rates. The stability of Kosovo's banking industry, as well as the constant growth rate of financial intermediation in Kosovo, promote the improvement of loan conditions and the continual creation of new financial products. The banking sector's financial soundness indicators in Kosovo are at a highly good level, with the continued fall of non-performing loans standing out in comparison to other regional nations in terms of credit portfolio quality.

In terms of capital adequacy standards, the Central Bank of the Republic of Kosovo has followed best international practices by enacting Regulations that are designed to protect banks against unexpected losses. The Law on Banks, Microfinance Institutions, and Non-Bank Financial Institutions, as well as the Regulation on Bank Capital Adequacy, are three of the most important legislative acts produced by the CBK, which regulate financial activity and set capital adequacy standards. The Regulation on Bank Capital Adequacy establishes the following capital requirements:

1. Banks should have at least seven (7) million Euros of paid-in capital, at all times,

2. Banks are required to maintain a minimum ratio of 12% (twelve per cent) of risk assets and other risks, in total capital and 8% (eight per cent) in Tier 1 capital. This minimum applies to all banks. Under its powers in paragraph 2 of Article 16 of the Law No. 04/L-093 on Banks, Microfinance Institutions and Non-Bank Financial Institutions, the CBK may require individual banks to maintain higher ratios,

3. Banks shall apply the basic indicator approach (BIA) under the Basel II capital framework. a) The BIA requires a capital charge of 15 % (fifteen per cent) of gross income to be added to the risk-weighted assets of the bank in calculating the risk-asset ratio. Gross income is defined as net interest income plus net non-interest income,

4. If the CBK assesses that a bank is highly exposed to the market risk it may require additional capital to the bank,

5. The CBK requires banks to develop an internal process for capital adequacy planning concerning their risk profiles, which continuously presents the adequate level of capital, estimated by the bank. The bank's internal process for planning the adequacy level of capital will be subject to CBK assessment,

6. Banks are required to maintain a minimum 7 per cent leverage ratio. (Leverage ratio equals total equity / total assets).

Banking Indicators

Approximately 90% of assets are held by banks with foreign ownership. Austria is the largest stakeholder in financial institutions, accounting for roughly 24% of assets, followed by German ownership (22%), Slovenian ownership (15%), Kosovo ownership (11%), and Serbia ownership (1.7%). The number of banks with Turkish capital is on the rise, with 16 percent ownership.

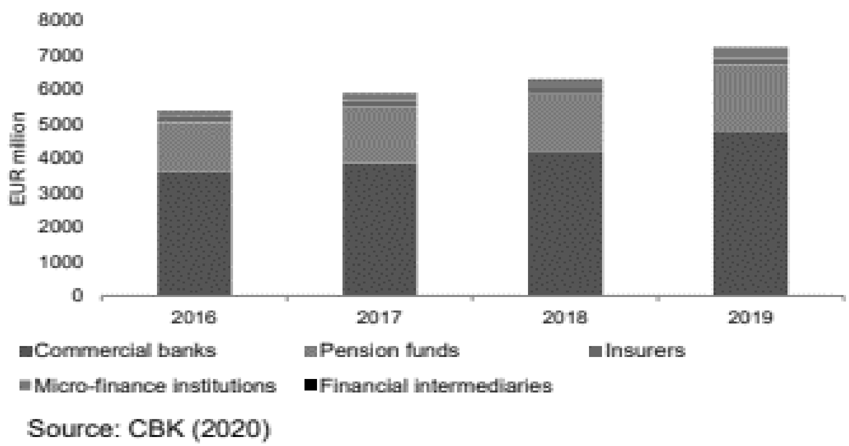


Figure 1. Asset's value of Kosovo's financial system

At the end of 2019, the overall assets worth of Kosovo's banking system had increased by 14.9 percent year on year to 7.3 billion Euro. The rate of financial

intermediation (assets to GDP ratio) grew by 8.6% to 102.5 percent. The banking industry, followed by the microfinance sector, continues to be the largest contributors to the increase of financial system activity (Fig.1).

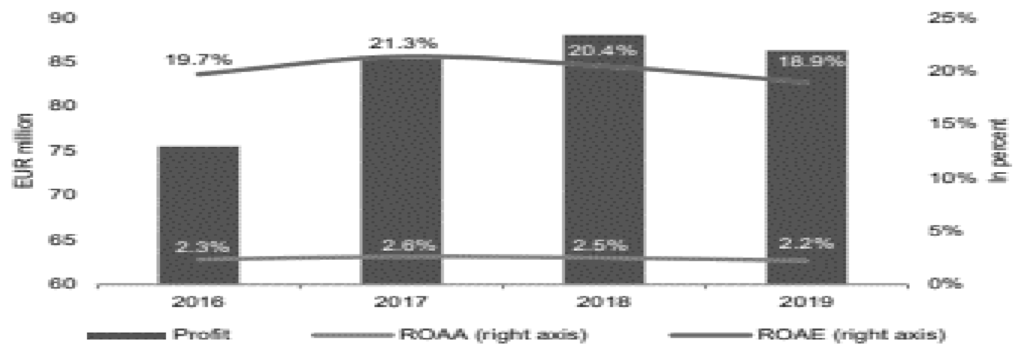
Deposits, which account for 82.1 percent of total liabilities and own resources, sustain the banking sector's activities. Total deposits climbed by 16.2 percent to EUR 3.91 billion, owing mostly to transferrable deposits held by families.

Table 1. Structure of the banking sector liabilities

Description	2015		2016		2017		2018		2019	
	EUR million	Share (%)	EUR million	Share (%)	EUR million	Share (%)	EUR million	Share (%)	EUR million	Share (%)
Balance with other banks	43.4	1.3%	59.1	1.6%	67.2	1.7%	108.3	2.6%	67.0	1.4%
Deposits	2,702.9	79.8%	2,897.8	79.7%	3,094.5	80.0%	3,362.9	80.3%	3,908.1	82.2%
Other borrowings	17.6	0.5%	17.8	0.5%	16.0	0.4%	14.1	0.3%	42.1	0.9%
Other liabilities	191.8	5.7%	203.4	5.6%	184.0	4.8%	169.1	4.0%	175.0	3.7%
Subordinated debt	36.9	1.1%	38.4	1.1%	37.4	1.0%	33.5	0.8%	43.4	0.9%
Own resources	392.7	11.6%	420.6	11.6%	470.8	12.2%	497.7	11.9%	520.2	10.9%
Total liabilities and own resources	**3,385.3**	**100%**	**3,637.1**	**100%**	**3,869.8**	**100%**	**4,185.5**	**100%**	**4,755.7**	**100%**

Source: CBK (2020)

Two profitability measures, ROAA and ROAE, indicated the banking sector's financial status in 2019. In 2019, ROAA fell by 0.3 percentage points to 2.2 percent, down from 2.5 percent, while ROAE fell by 1.5 percent to 18.9 percent, down from 20.4 percent. Despite a minor drop in profitability indices, the banking industry still makes a lot of money.



Source: CBK (2020)

Figure 2. Profitability indicators of the banking sector

The banking sector's capitalization level remained to be much higher than the regulatory requirement of 12.0 percent. At the end of 2019, the capital adequacy ratio was 16.8 percent.

For all of the periods investigated, the capital adequacy ratio demonstrates strong compliance with regulatory standards. The Central Bank of Kosovo has set a minimum CAR ceiling of 12 percent in its Regulation on Bank Capital Adequacy.

Figure 3 shows that the banking industry in Kosovo has a CAR that exceeds regulatory capital requirements, ranging from 17 percent in 2013 to 16.8 percent in 2019.

	2013	2014	2015	2016	2017	2018	2019
CAR	17.00%	18.20%	19.70%	18.40%	17.90%	17.20%	16.8
Net Profit	5.4	12.9	11.5	15.7	9.8	12.6	16.6
ROAA	1.10%	2.40%	2.00%	2.60%	1.80%	2.00%	2.50%
ROAE	11.40%	23.20%	17.10%	**21.70%**	14.20%	16.60%	22%
NPL	8.80%	8.40%	6.10%	4.70%	3.10%	2.60%	2.50%

Figure 3. Capital Adequacy Ratios and profitability indicators 2013 -2019

Figure 3 also showed us banking profitability as measured by net profit, ROAA, and ROAE, all of which had a very positive trend. Another noteworthy feature is the decline in nonperforming loans (NPLs), which has decreased from 8.8% in 2013 to 2.5 percent in 2019. The NPL factor acts as a catalyst for increased profitability.

Conclusion

Commercial banks, as corporate organizations, are primarily concerned with maximizing profits and focused on profitability rather than necessary capital or bank stability. The authorities, on the other hand, have a different view and are interested in a greater level of capital adequacy ratio, which would provide protection and cushioning for the banking industry in the case of unforeseen occurrences. As a result, the behavior of the capital adequacy ratio in connection to banking profitability was examined in this paper.

Not just for bank regulators, but also for bank depositors, the consequence of a simultaneous positive link between capital and performance gives security and trust. Apart from the positive association between these two measures, the finding that capital adequacy ratios are greater than legal capital requirements, not just of national regulators but also of Basel III capital adequacy ratios, is quite significant. According to the research, the banking industry is properly funded and provides protection in the event of unexpected losses.

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ACCOUNTING, ANALYSIS AND AUDIT

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THE MAIN METHODS OF SME'S EVALUATING AND THEIR IMPORTANCE TODAY

Abstract. *The evaluation of the economic units determines the market value of an entity, which means that it calculates the economic benefits derived from a combination of the material and non-material goods. It is repeatedly emphasized that the assessment of an entity is not only science, but also art, as it combines economic quantitative data with qualitative analysis, as well as the branch where an entity operates and the conditions of economy in general.*

If someone will evaluate a large company listed on the stock market, that can be done just by analyzing the share price that has been electronically revealed in the press. The problem lies in the evaluation of small economic units which are not listed on the stock market. Precisely these kinds of entities will be the object of analysis in this paper.

Keywords: *entity, financial analysis, evaluation, DCF model,market value.*

INTRODUCTION

The creation of the value constitutes the main strategic goal of any entity. However, the " value " term has not the same meaning for all. Also, the methods of its calculation are quite different. The current economic crisis has provoked the concern of investors, both small and great, in association with their investment activity. In such a climate of uncertainty, the necessity of determining the true value of the entity is essential.

In order to eliminate this uncertainty, investors often take advices from investment consultants, who usually possess a lot of information and proposals based on one or more valuation models. Based on the fact that each model gives its assessment, the question that arises is: which model is the most trusted ? The answer to this question is not so simple, as proper choice of model differs from one entity to another, because the basic sizes that illustrate the creation of value, vary according to the specific characteristics of each entity and the branch in which it operates.

THE MAIN FACTORS THAT AFFECT THE SME EVALUATION

Full analysis of a small or medium economic unit should start with the analysis of macroeconomic developments, gradually continue with the analysis of competitive conditions prevailing in the branch in which it operates and conclude to the analysis of particular factors affecting on it .

A. Macroeconomic Factors

The macroeconomic factors that concern an analyst are grouped into two categories: the ones that cause changes in the general demand for goods and services in the economy and those that cause changes in the general supply. Thus, examples of macroeconomic factors, with positive consequences in the general application constitute of: the increasing of state funding, increasing of money supply, increasing of demand and reduction of tax rates. As examples of factors with negative consequences are mentioned the increased cost of production, decay and lack of raw materials from natural causes etc. The earnings of a small economic unit depend heavily on the macroeconomic situation of the country, as well as on the economic situation of a region. Economic growth may affect the customer purchasing power of a country and therefore the profits of a small economic unit as well. Small units are more at risk and their profits unstable, even more when referred to an economic unit that operates in a small town with limited activity and clientele.

B. Conditions of the branch

The branch in which the entity operates dictates the analysis of the conditions in which the unit operates. The analysis of these conditions is considered important for the assessment of an entity. The purchasing power and competition are two factors that mutually affect each other. The market size and development, as well as the competition that an economic unit is facing or will face, are important factors of evaluation . When evaluating the antagonism of a branch, it should be evaluated not only the actual antagonism, but also the upcoming one. Referring to the efficient markets theory, a branch is particularly profitable until competition appears, where the participation of other entities in the manufacturing process will reduce sales and the income of related entities.

C. Specific conditions of the economic unit

After analyzing the economy and the branch in which the entity is included, it is clear that an analysis should be carried out regarding the specific conditions in which the entity operates. This analysis focuses on the quantitative and qualitative characteristics of these terms. The analysis of the quantitative characteristics refers to the detailed analysis of all information coming from the accounting system. In fact, the information sheet constitutes the raw material for every analyst, who must have deep knowledge of how the financial statements are prepared, of the choices made by the management and the consequences that these choices have on the final product, ie the published financial statements. Among the qualitative factors of an entity, there should be mentioned: the quality of management, which refers to the correctness of the elections that have been made in relation to activities of the business, the development of its staff and the increase of the economic unit, in general. Also, the quality of labor relations, quality of produced products, the number of clientele and the entirety of an entity's suppliers are another group of qualitative factors of the economic unit.

MAIN METHODS OF SME EVALUATION

For the evaluation of the economic units, a variety of assessment methods can be used. Among the main methods accepted to assess the small and medium economic units, based on contemporary literature as well, are: the asset - based approach, income - based approach and market-based approach.

The main method , that is mostly used for the assessment of economical units, is the one based on the incomes.

This method is derived from the discounting of the future cash flows or the future earnings of the entity and is regarded as very important for the evaluation of small economic units, as well as for the major ones.

For this reason, the implementation of methods of the assessment are made in accordance with these features:

A. Asset-based method approach

This method is applied in parallel with the implementation of other methods. According to this method, the value of an entity is equal to its equity, in the way they

appear in the balance sheet. Different analysts apply three approaches when assessing under this method: the book value of elements, the replacement value and the liquidation value.

Since the balance sheet of an entity is constructed in accordance with the basic rules of accounting and the llegislation in force, it occurs in a way that it gives an appearance of an entity which is far from its actual value and its net value. For example, tax law obliges entities to prezent their long-term assets like land, buildings, etc. not with the current market value, but with the value that they had been purchased, minus the depreciation. Also, when assessing the goods, the assessment should be made in the smallest value amongst cost and current value etc. This way, in order to accurately implement the method based on the net asset condition , we need either to rebuild balance or correct the data of the given balance .

Regarding the second approach, the replacement value is considered the value of an element that is estimated at real prices, not at historical values. This should be used in the elements of the asset as well as in those of the liability of the balance.

As for the third approach, analysts support the view that an entity is worth less when in function then when is in liquidation. According to the analysts, this is explained by the fact that an entity which can interrupt its activity, or is in the process of liquidation, is subjected to the application of special rules, such as: the assets are valued at liquidation prices, which are lower than normal market prices for used assets, goods are also valued at lower prices etc.

B. Method based on the entity's income

This method is derived from the discounting of the future cash flows or future earnings of an entity and is considered very important for the evaluation of small units, as well as for the evaluation of large economic units listed on the stock exchange.

The accurate implementation of this method requires estimates and specific programs, therefore we apply a simplified form of this method. Under this method, the value of an entity equates with the present value of the future cash flows which are expected to be realized in a few years (3-5 years), plus the present value of the residual value of the entity. The presentation of the future flows at the present is

made by a coefficient, whose size depends on the size of the risk that a small economic unit takes. Thus, an entity is compared to a bond that brings a certain annual profit and finally is settled at its nominal value for several years. A special characteristic of small economic units is that they have a not-so- reliable future planning, due to the lack of experience or because of the unreliable data presented in their financial statements. In this way, when using future earnings, the analyst must examine whether the projected earnings are real and represent an attainable goal, or are just profits which the owner expects. If an entity has been successful in the recent years (3-5 years), then forward planning can be considered as reliable . Judging by the analysis that was done to small economic units taken as the object of this study , these units have little experience in future budget preparation and planning of earnings. According to this method, the value of the entity will be provided through the following formula:

$$\text{Value of economic unit} = \sum \frac{CF}{1+r} \qquad (1)$$

CF – the future cash flows

r - discounted rate

For assessing the economic units obtained in this study, we will rely on three techniques suggested by the contemporary bibliography:

1.The discounted cash flows

According to this technique, the future cash flows are not considered as stable, so in this way the analyst must create an economic situation expected from the information that he will be given and then continue to discount cash flows for each period separately. A period of 5 years is usually analyzed. It is clear that the entity continues to have value even after 5 years, which is considered as the terminal value. In the case of this study, the data collected belong to 44 economic units for a period of three years. To calculate this value, we will consider the cash flows of last year, as an eternal value that should be capitalized and discounted , and presented in present value.

$$\text{Value of economic unit} = \frac{CF_1}{(1+r)} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + [\text{CF3 x } \frac{(1+g)}{(r-g)} \text{ x x}] \qquad (2)$$

g- the estimated rate of sustainable development

2. The technique of capitalization

This technique can be used when the cash flows expected in the future are stable. In this case:

$$\text{Market value} = \frac{Annual\ CF}{Required\ \ Yield} \quad (3)$$

The required yield can be determined by the yield of similar economic units. The disadvantage of this technique is the fact that it ignores the development of the economic units and assumes that the future profits are continuous.

3. The technique of permanent increase

This technique is very usable in economic units for which we possess available information that they will have a sustainable pace of profit growth in the future. In this case, the value of the entity will be given by the formula:

$$\text{The value of the entity} = \frac{CF_1}{r - g} \quad (4)$$

CF1 – Cash flow in the end of first period

r - the appropriate discount rate

g – the estimated rate of sustainable development

If an entity will have a sustainable development, then the method of discounted cash flows is considered the most accurate and most suitable for its evaluation.

B.1. The calculation of the discount rate in small economic units

An important step in evaluating an entity with the method of discounted cash flows, is the calculation of the discount rate. Based on contemporary literature, the discount rate of the cash flows for smaller units ranges from 30% - 50%. This rate is not considered high, if we take into consideration the risk and lack of liquidity of small economic units. Several studies have shown that the ROE of a small economic unit is approximately 30% - 40% higher than the ROE of large economic units of the same branch listed on the stock exchange. In order to choose a discount rate, there should be analyzed the entity's risk, the risk to the branch, manufactured products, competition etc. The greater the risk, the higher the discount rate. For solving this occurring problem, analysts have tried to determine a discount rate to reflect the

desired return for a small economic unit. The discount rate should be adapted to the risk that exists in the branch in which the entity operates, as well as to the risk that this unit faces.

C. Market-based method

In order to successfully apply this method, the analyst must have available data for similar assessments in the past. For small economic units, this is relatively difficult. For an accurate estimate, analysts use three methods:

1. Method of leading entity

In this case, the analyst must have considerable experience, in order to choose the right leading entity on which will be based to make a similar assessment of the entity that is required to be evaluated.

2. Merger or acquisitions method

Mergers and acquisitions in a branch can give an idea of a value related to the entities that are required to be evaluated. In general, finding reliable data for most of the branches is relatively difficult. Usually information on these actions, in the group of small economic units, are not considered to be very accurate for them to be used in the evaluation. However, in cases where reliable data exist, they can be used at the end of the evaluation process to make a check and comparison of the value of the entity that has to be evaluated.

3. Method of recent transactions' analysis

This is one of the best methods in the context of market-based method. If there have been analysis of recent transactions of the entity analyzed, the market value of the stock market can be used as a basic element for determining a fair market value.

However, despite the existence of different models and methods of assessment, what is mostly important to note, is that the method of discounted cash flows (DCF method) is the most effective method in the evaluation of an entity. So as to be as accurate as possible, the adjustment to the cash flows has to be made, based on the characteristics of small economic units.

CONCLUSIONS

The economic science has created a variety of valuation methods of economic units. What are mostly analyzed in this paper, are the methods that are considered

more suited to the evaluation of small economic units, according to foreign bibliography.

An entity possess various types of assets. As long as it is functioning and performing continuous profits, its value is greater than the sum of the value of the assets it possess. There are entities that have a small amount of their assets, but nevertheless, have great value. It is clear that the property of an entity does not express its value. When evaluating an entity, one should consider its profits in the present, as well as those that are expected in the future. An entity's profits are the main indicator for its position in the market, for the clientele, for the manner of its organization.

Not all methods that are created by the economic science are equally valid for all cases. Thus, the net state method is suitable for entities that have ceased their activities or has not profit. Evaluation methods that are based whether on the the past years, or on future profits, are suitable to be implemented in the entities which continue their activities normally and in entities with increasing profits. Most of the units, used as samples in our study, were evaluated by this method. In today's practice assessment, a method which is increasingly used is the method of discounted cash flows (DCF method), because it appreciates the fact that the fundamental importance lies in the future profits and not in the past ones. Also, this method takes into account taxes and resources required by an entity to remain a strong competitor in the market.

In order for the results of the evaluation to be more accurate, regardless of which method of assessment will be chosen, it is important that one more method of alternative assessment is used. In this way, one can better assess the potential of an entity and identify its value.

But also referring to Damodaran, one of the authors who has written so much about the valuation process, the problem in valuing an entity is not the fact that there is not a significant number of valuation methods, but the fact that there are many. Choosing the right method, in order to conclude on a logical value, is as important as understanding the way it is implemented. It is clear that nowadays, the main valuer of an entity is the market, however, it is necessary to have abundance of information

about the approximate value of the entity that is to be valued, which is provided through the process of evaluation.

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TAXATION AND ACCOUNTING SYSTEM

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ELECTRONIC SHOP AND LONGITUDINAL PRODUCT SALE

Abstract. *Within the scope of obeying principles of taxing it's necessary to make provision for the principle of taxing at place of destination and minimize the administrative loading. From July 1st 2021 the existing individual adjustment for taxable persons based within the EU but who are not based in member state of consumption about longitudinal product sale within the EU was extended and similar individual adjustment was applied to longitudinal product sale from third countries.*

Keywords: *tax, electronic shop, longitudinal sale.*

INTRODUCTION

From July 1st there will be changes related to VAT while selling products longitudinally. Regulations and limits are being changed that will bring unified rules for e-shops selling products to consumers in other countries of the EU. Changes are supposed to make submitting declaration of taxes easier for businessmen if they exceed the limit of longitudinal sales to other countries of the EU.

Notified changes will unify terms for e-shops that sell products to customers in countries of the EU other than the country that businesses are based in. They will apply to all Slovak e-shops with material products, that handle B2C sales and businesses without VAT reg. no. outside of Slovakia to other countries of the Union. It's so called mail-order sale that is being adjusted to longitudinal product sale.

Slovak e-shop that is selling products not only in Slovakia, but also to costumers (natural persons or businesses without VAT reg. no) from countries of the EU (e.g. Czech Republic, Austria and Poland) has to watch the limit of sales of their foreign online sales for every country, to observe when they have to compulsory register as a taxpayer in the given country. Until June 30th 2021 countries of the EU have their own limits of sales assigned, however fom July 1st 2021 they are unifying and that is for all states in total. That means that reaching sales of compulsory registration for taxes for every member country individually will not be observed. After taxpayer's registration in a foreign country, the businessman will receive foreign VAT reg. no, they will invoice for price including foreign VAT and they will

submit foreign declarations of taxes and will levy tax in the foreign country. And that is in every country where they become a taxpayer.

Digital boundaries, persons facilitating product delivery

Longitudinal sale of a product delivered from one member state to another, as well as from third countries to the EU is significantly facilitated by using digital boundaries, like markets, platforms, portals or similar means, meanwhile storing is often times applied.

In order to reach the right tax levy and lower the administrative loading of salesmen, tax authorities and consumers, taxable persons are engaged, that facilitate longitudinal product sale by using these digital boundaries, to select VAT from sales, as it was determined that these persons will be considered as executors of such sale (so called reputed providers), in act number 222/2004 of body of laws about value added tax (further just a "VAT act") adjusted by the regulation § 8 section 7 of VAT act.

In case of a longitudinal product sale delivered from the third country or third countries of the EU, this principle is restricted to a product sale, which is delivered or transported in shipments of value that does not exceed150 euro.

In connection with product delivery to the EU, the provider will pay VAT that can be subtracted. For this purpose, the provider should always be registered in member state in which they acquired this product or which they delivered this product to. Deliveries from the provider selling products by using digital boundaries are extempted from VAT, product sale via digital boundaries – via reputed provider is taxed based on the registration in the schema of individual adjustment – so called OSS EU schema ((§ 68b VAT act).

Providers that are not based in the EU and who use digital boundaries for product sales can store the supplies in multiple member states and apart from longitudinal product sale within the EU can deliver products from these supplies to acquirers in the same member state. Until June 30th 2021 the individual adjustment for longitudinal product sale within the EU and for services that are provided by taxable persons based in the EU but not based in member state of consumption was not applied to so called "home" deliveries. With the aim to lower the administrative

loading, these taxable persons that facilitate product delivery to nontaxable persons within the EU by using digital boundaries and assuming that they received and delivered the product, also have the option to utilize this individual adjustment for declaration and payment of the taxes for presented home deliveries (EU OSS schema according to § 68b of VAT act).

Crossborder e-commerce and application of unified limit for compulsory registration for VAT in foreign countries in the amount of 10 000 euro of annual sales

Annual sales in the amount of 10 000 euro involves the delivery of so called digital services provided to nontaxable person and also longitudinal product sale within the EU with terms and assigned place of product delivery or providing of the service. When mentioned limit is exceeded, the place of product of delivery will be assigned according to § 14 section 2 of VAT act (it's presented where product transportation finishes there) and place of service delivery will be assigned according to § 16 section 14 of VAT act (place of delivery is costumer's residence or address).

Longitudinal product sale from July 1st 2021

Until June 30th 2021 it applies to mail-order product sale that Slovak provider, who provided products to customers in other member states is obligated to register in these member states after reaching assigned sales in the amount of 35 000 or 100 000 euro.

From July 1st 2021 Slovak provider has these options after exceeding the limit:

- they can register as tax payers in other member states (the foreign VAT reg. no. will be assigned to them). Sales will be invoiced with tax rate of given state and VAT will be paid-off to tax institution of particular state.

- if the provider is based only in the Slovak Republic and product deliveries of so called digital services do not exceed 10 000 euro, they can tax the deliveries by Slovak VAT – and they do not have to register in these member states

- they can register in the Slovak Republic under individual OSS tax adjustment (One Stop Shop) for the EU and submit one declaration of taxes, in which they state VAT for customers from other member states and that is why they don't have to

register for VAT in these states. VAT is paid off in the Slovak Republic. In case that businessman chooses this option, they have to remain for 2 years.

One Stop Shop (OSS) – the individual tax adjustment

The individual OSS tax adjustment has two schemas:

- schema for the Union, which will be utilizable by:

- service providers based in the EU that provide services to nontaxable persons with place of delivery assigned according to § 16 of VAT act in member state, in which the provider is not based,
- longitudinal product providers in the EU, who deliver products to customers not registered for VAT to member states, in which provider is not based,
- operators of digital boundaries, who are not direct product providers but basically facilitate longitudinal product delivery in the EU for "original" providers, and for this reason are considered as longitudinal product providers if the "original" provider is not based in the EU (see example number 4 in this part),

- **schema outside of the Union**, that exclusively refers to service providers based outside of the EU, who provide services to nontaxable persons with place of delivery assigned according to § 16 of VAT act within the EU.

The reason for the individual OSS tax adjustment establishment is equal appraisal and principle of every member state of the EU seeing that with the effect **from July 1st 2021**:

• **the figure** of product delivered longitudinally within the EU, during which the provider is obligated to register for VAT purposes, submit declaration of taxes and pay taxes in every member state of the customer, will be appointed to a maximum limit of 10 000 euro, which is cumulative for all deliveries to other member states (that means that the limit will not be judged individually for every member state anymore).

• **the circle of persons** will be extended; the same regime that applies to longitudinal product providers within the EU, will be applied to them, even if they do not deliver their own products, that involves the operators of digital boundaries, who facilitate longitudinal product delivery for their providers,

• **the circle of services** will be extended, meanwhile the provider does not have to register for VAT purposes, submit declaration of taxes and pay taxes in every member state, where the place of delivery assigned according to § 16 of VAT act is any different than the state that the provider is based in.

The individual OSS tax adjustment by previously presented subject (disregarding if they are or are not registered according to § 4, § 4b, § 7 or § 7 of VAT act for VAT purposes), enables avoidance of registration in every member state of consumption (costumer), where they deliver products longitudinally to persons not registered for VAT or provide services for nontaxable persons with delivery place according § 16 of VAT act in member state, in which providers are not based in as well as obligations to submit declaration of taxes and pay taxes, that appertains to member state of consumption according to national legislative of member state of consumption (costumer).

Utilization of the individual OSS tax adjustment **is not compulsory, but voluntary**, however if a service provider, a longitudinal product provider within the EU or a person considered as longitudinal product provider within the EU opts for it, they are obligated to apply it to every service and product delivery, that the OSS applies to.

The individual OSS tax adjustment **applies to**:

• **longitudinal product sale within the EU** – so called "mail order sale" or "on-line sale" or "internet sale" of products that are delivered to customers not registered for VAT and that is within member states of the EU – from one member state to other member states, if the provider is not based in consumer's member state,

• **product sale via digital communication boundaries**, like digital market, digital platform, digital portal or similar digital means (further just „digital boundaries") that are delivered to customers, who are not registered for VAT, and that is within member states of the EU – from one member state to other member states and also within just singular member state, if the provider is a person based in the EU,

• **providing services**, that have delivery place assigned according to §16 of VAT act in the EU, to nontaxable persons from member states, in which the provider is not based in.

The individual OSS tax **adjustment does not apply to**:

• longitudinal sale of a product that is delivered to customer from member state of the EU directly from third countries (outside of the EU). A different individual tax adjustment applies to such deliveries – Import One Stop Shop (IOSS), assuming that customer's delivery does not exceed 150 euro,

• product sale to persons registered for VAT,

• product sale, during which an individual tax adjustment is being used according to §66 of VAT act, e.g. sale of a used product, where taxing of "additional charge" or "margin" is applied,

• sale of a new means of transportation (motor vehicle, batiment or airplane – defined in §11 section 11 and 12 of VAT act),

• product sale with installation or assemblage executed by the provider or on their account,

• services delivered to taxable persons and nontaxable persons, during which the place of delivery is in provider's member state, or place of delivery is assigned according to §15 of VAT act.

Tax subjects can register for individual OSS tax adjustment from April 1st 2021 to June 10th 2021, in order to apply it to product deliveries and providing of services starting July 1st 2021.

Until June 30th 2021 this schema was only used for digital services, from July 1st 2021 it will be used for all service deliveries for nontaxable persons with place of delivery in the EU according to §16 and also for longitudinal product sales within the EU.

Place of product delivery during longitudinal product sale

Longitudinal product sale within the EU ((§14 section 1 let. a) of VAT act) is understood if:

- the product is delivered or transported by the provider or on their account, and that stands even if the provider indirectly intervenes in transportation of a product

from a member state other than the member state where product transportation to customer finishes, and also if
the customer is:

- taxable person or corporate entity, that is not taxable and their acquiring of the product is not the subject of taxes according to §11 section 4 of VAT act (they do not tax on their own),

- nontaxable person.

Longitudinal sale of a product delivered from third countries (§14 section 1 let. b) of VAT act) is understood if,

- the product is delivered or transported by the provider or on their account, and that stands even if provider indirectly intervenes in transportation of a product from third countries to customer in member state, if these terms are fulfilled,

the customer is:

- taxable person or corporate entity that is not taxable and their acquiring of the product is not the subject of taxes according to §11 section 4 of VAT act,

- nontaxable person.

Deliveries of new means of transportation and deliveries of product with installation and assemblage executed by the provider or on their account are not considered as longitudinal product sales.

Assigning the place of delivery:

the place of delivery during longitudinal product sale within the EU (§ 14 section. 2 of VAT act) is a place, where the product is located at a time when product delivery or transportation to the customer finishes, if § 16a of VAT act is not applied the place of delivery during longitudinal sale of a product delivered from third countries (§14 section 3 – 4 of VAT act) if:

• Product delivery from the third country to a member state other than the state, in which the product delivery or transportation to the customer finishes is a place, where the product is located at a time when product delivery or transportation to the customer finishes.

• Product delivery from the third country to member state, in which the product delivery or transportation to the customer finishes, is in this member state, if the individual adjustment according to § 68c applies to such delivery.

Taxation of digital platforms through fiction of so called „reputed provider“

If the taxable person “facilitates” the longitudinal mail order sale of a product delivered from third countries, whose value does not exceed 150 euro via “digital boundaries” such as market, platform, portal or similar means, it’s considered that this taxable person received and delivered given product on their won – so called “reputed provider” (§8 section 7 second line of VAT act).

If the taxable person “facilitates” product delivery within the EU executed by taxable person not based in the EU to a person other than the taxable person via “digital boundaries” such as market, platform, portal or similar means it’s considered that this taxable person received and delivered given product on their own – it’s a fiction of so called “reputed provider” (§8 section. 7 first line of VAT act – product delivery within the EU).

The transportation is assigned to delivery from the platform presented to the customer – based on §14 section 6 of VAT act if the taxable person received and delivered the product according to §8 section 7, product delivery or transportation will be assigned to delivery executed by this taxable person.

While delivering a product for the platform, the extempt from taxes is applied according to §42a of VAT act – if the product is delivered to a taxable person, who facilitates the delivery of this product within the EU according to §8 section 7 first line of VAT act, product delivery for this taxable person is extempted from taxes.

The platform that facilitates product delivery for a provider from the third country to customers – nontaxable persons within the EU, pays taxes via digital declaration of taxes in member state of identification, based on registration in the schema of individual adjustment – so called OSS EU schema (§68b of VAT act).

Term “facilitating” longitudinal mail order sale of a product delivered from third countries

Term “facilitating” is important for reviewing if the platform is considered as so called “reputed provider.” Presented term is explained in the article 5b to 5d of Executive council regulations (EU) number 2019/2026.

It’s a utilization of digital boundaries in order for the acquirer and provider offering products for sale via digital boundaries to be able to start a communication, whose result is product delivery via these digital boundaries.

Taxable person does not facilitate product delivery, if all these terms are fulfilled:

a) given taxable person does not set any of the regulations and terms of product delivery neither directly nor indirectly;

b) given taxable person is not engaged in confirmation of customer’s charging for the payment neither directly nor indirectly;

c) given taxable person is not engaged in product orders or deliveries neither directly nor indirectly.

Presented statements do not apply to taxable person that provides only one of these activities:

a) processing of payments in connection with product delivery;

b) insertion or product advertisement;

c) redirecting or transferring acquirers to other digital boundaries, where products are on sale, and that is without any other intervention into its delivery.

Taxable person facilitates the delivery, if they either directly or indirectly:

- set regulations and terms, under which the product delivery is executed:

equally for product provider and customer:

• in context of the product delivery (e.g. in context of the price, ways of payment, product delivery, warranty, product return);

• in context of EI utilization (web page/platform) – wide range of utilization of technical models in the electronic shop

• is directly or indirectly engaged in confirmation of customer’s charging for the payment

• when EI can affect when and at what time and under what terms the customer pays for product delivery; accepting a payment card; sending the message about

product payment to customer; communication with the customer about ways of payment, price, additional charges; compiles data about the customer in regards to payments (card number, card validity,...)

The engagement in ordering or product delivering is not limited by physical product delivery. It means that the platform may/may not affect product delivery in any way. When this term is being evaluated, all the aspects of delivery have to be observed.

Beginning of tax obligation

According to §19 section 11 of VAT act, during product delivery by taxable person, who facilitates product delivery within the EU and longitudinal product sale according to §8 section 7 of VAT act, and during delivery of this product to this taxable person, the day of product delivery and the day of beginning of tax obligation is considered as a day of payment acceptance.

According to the article 41a of Executive council regulations (EU) number 2019/2026, the moment of payment acceptance is the moment **when the provider selling products via digital boundaries or on their account receives the payment confirmation from the acquirer**, message about payment authorization or payment obligation, in disregard of when the actual payment is realized, depending on what occurs first.

Record obligations for the platform that facilitates deliveries, but it's not considered as „reputed provider“

If a taxable person, other than the taxable person according to §8 section 7 of VAT act facilitates the delivery of products or services to nontaxable person in the EU, they are obligated to keep records according to §70 section 9 of VAT act.

Records have to be sufficiently detailed in order for the organs in member states where the tax is due to be able to validate it. Records have to be available digitally at request of particular member states and kept for the period of 10 years.

According to executive regulation 2019/2026 (article 54c section 2) records involve:

a) the name, postal and electronic address or web page of the provider, whose deliveries are facilitated via digital boundaries, and if they are available, additionally:

- VAT identification number or national tax identification number of the product provider or service provider;

- the number of bank account or number of virtual account of the product provider or service provider;

b) product description, its price, place where the product delivery or transportation finishes, along with time of product delivery, and if it's available, serial number or transaction's unique number as well;

c) service description, its price, information, based on which the place and time of service can be assigned, and if it's available, serial number or transaction's unique number as well.

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MATHEMATICAL METHODS IN ECONOMY

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A DESCRIPTION OF SOME FACTS AND OPEN PROBLEMS IN DISCRETE-GEOMETRY, RELATED TO COVERINGS

Abstract: *In this paper, we will present a description of some facts so far regarding some results and open problems, of discrete geometry, related to the covering problem. Covering is a very interesting subject in discrete geometry. Due to its many applications, in recent years covering theory has become a very active research field in mathematics.*
Keywords: *convex body, lattice, density, packing*

INTRODUCTION

The whole point is that in a given volume we maximize the number of elements we will be covering, so the density should be satisfactory. So it is clear that we are dealing with optimization: In the case of packaging we need to maximize the number of items to be coverage, so we have to have the best packaging density.

Covering theory finds many applications in various fields, for example, transport, in the field of covering objects that are sent by postage, covering of glass or crystal objects (of course, other factors such as strength and type of the material with which it is covered), etc. Also a part of covering theory is tiling theory, which again finds applications in many areas, for example, in cutting pieces for different garments, in the clothing industry, the optimal separation for a covering as much as possible good to avoid as much as possible the losses in the cutting of the covering tiles used by the furniture makers, the roof covering builders, the wave coverage of different signals both telephone and TV waves, etc. A good knowledge of coverage theory, leads to the best possible minimization of costs for certain coverage. Discrete geometry should be used for a "good" study of covering problem. In this paper we will think that: The objects we want to covering are convex objects.

Below we list some simple mathematical concepts.

Definition 1.1: *A set* ***B*** *is* ***convex*** *if for any two points $P, Q \in B$ the entire line segment PQ is also contained in B.*

Where Int(B)*-is interior of set B.*

Definition 1.3: *A collection* $\mathrm{B}=\{B_1,B_2,\ldots\}$ *of compact sets where* $\mathrm{Int}(B_i)\neq\varnothing,\forall i$ *forms a packing in* $\mathrm{V}\subseteq\mathrm{R}^n$, *if* $\bigcup_j B_j\subseteq\mathrm{V}$ *and* $\mathrm{Int}(B_i)\cap\mathrm{Int}(B_j)=\varnothing,$ for $i\neq j$.

Definition 1.4: *If B consists of all translates of a particular set B by vectors belonging to a given lattice* L *, i.e.,* $\mathrm{B}=\{B+\lambda\,|\,\lambda\in\mathrm{L}\}$, *then* B *is said to be a lattice arrangement.*

Definition 1.5: *The density of a collection* B *relative to a limited domain* V *is,*

$$den(\mathrm{B},\mathrm{V})=\frac{\sum_{B\in\mathrm{B}}m(\mathrm{B}\cap\mathrm{V})}{m(\mathrm{V})}$$

where m(*)-is "volume" (area in 2D-case, volume in 3D case, etc..)

Definition 1.6: *The* ***best covering density*** *of a collection* B *relative to a limited domain* V *called* $Cov.den_{\mathrm{V}}(\mathrm{B})=\inf\{den(\mathrm{B},\mathrm{V}):\mathrm{B}-\text{covering}\}$ *where the inferior is taken over all coverings with C which have a density.*

The covering number $Cov.den_{\mathrm{V}}(\mathrm{B})$ called the density of the smallest cover (minimum covering or most economical covering). Of course these terms are somewhat informal, because the most economical covering is usually not defined uniquely, and it is not even clear a priori that there is a more minimum covering, in all the problems we will discuss, this can be easily checked.

Definition 1.7: *The* ***best covering density*** *of a collection* B *with congruent elements (with congruent copies) of relative to a limited domain* V *called* $\underset{Cong}{Cov.den_{\mathrm{V}}}(\mathrm{B})=\min\left\{\underset{Cong}{den}(\mathrm{B},\mathrm{V}):\mathrm{B}-\text{covering}\right\}$.

The lattice covering density and the translative covering density of B be defined as

If we restrict our attention to lattice covering's, or to covering's with translates of ***B***, then we obtain the similarly defined notions of the *best lattice covering density* with $Cov.den^{\mathrm{L}}_{\mathrm{V}}(\mathrm{B})$ and the *best translative covering density* of ***B*** with $Cov.den^{\mathrm{T}}_{\mathrm{V}}(\mathrm{B})$. That is, $Cov.den^{\mathrm{L}}_{\mathrm{V}}(\mathrm{B})=\inf\{den(\mathrm{B},\mathrm{V}):\mathrm{B}-\text{latice covering}\}$ and

$Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B}) = \inf\{den(\mathrm{B},\mathrm{V}) : \mathrm{B} - \text{translative covering}\}$.

It is clear that for every B, we have the inequality

$$1 \le Cov.den_{\mathrm{V}}(\mathrm{B}) \le Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B}) \le Cov.den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B})$$

An isometry of V that takes every member of B onto another one is called a *symmetry* of B, and the collection of all symmetries of B (including the identity) forms the *symmetry group* of B. The symmetry group of B is nontrivial if it contains an isometry other than the identity. B is called periodic if its symmetry group contains d linearly independent translations and a periodic if its symmetry group contains no translations.

For covering with congruent copies, so in the case where, elements in a coverage are thought to be of the same product (as they usually are), so the elements to be coverage are in the same size and shape. So elements of a collection $\mathrm{B} = \{B_1, B_2, \ldots\}$ are congruent to a convex body ***B*** and $\mathrm{Int}(B_i) \cap \mathrm{Int}(B_j) = \varnothing$, for $i \neq j$.

Definition 1.7: *The density of a collection* B *with congruent elements relative to a limited domain* V *is,* $\underset{Cong}{den}(\mathrm{B},\mathrm{V}) = \dfrac{\mathrm{card}\{i : \mathrm{B}_i \in \mathrm{V}\}\, m(\mathrm{B})}{m(\mathrm{V})}$ *where* $\mathrm{card}\{i : \mathrm{B}_i \in \mathrm{V}\}$ *is the number of congruent elements of collection* B *that can be packed in* V *and m(*)-is "volume" (area in 2D-case, volume in 3D case, etc..) of B.*

Definition 1.8: *The* ***best cover density*** *of a collection* B *with congruent elements relative to a limited domain* V *called*

$$\underset{Cong}{Cov.den_{\mathrm{V}}}(\mathrm{B}) = \inf\left\{\underset{Cong}{den}(\mathrm{B},\mathrm{V}) : \mathrm{B} - packing\right\}.$$

Clearly, we have that, $1 \le \underset{Cong}{Cov.den_{\mathrm{V}}}(\mathrm{B}) \le \underset{Cong}{Cov.den}(\mathrm{B},\mathrm{V})$.

COVERING

The elements to be covered are usually thought to be of the same shape and size (congruent copy), but may be different. Usually made combinations of cuts associated with coverings. Regarding the covering density we can say that: The closer the covering density of a convex body B is to "1", the fewer the number of congruent copies of B needed to cover a given big domain. Therefore, the most economical convex bodies for covering are those that admit a tiling, and the least economical

ones are the convex bodies with maximum covering density. According to an old result of [11], the covering density of the circle is $2\pi/\sqrt{27}$.

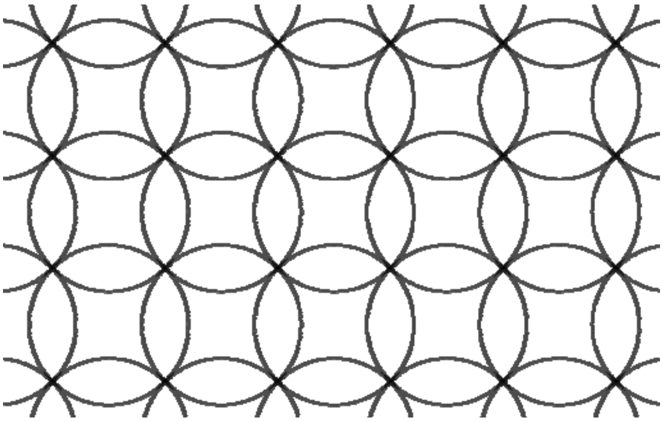


Figure 1. The thinnest covering of the plane by circles

The question arises, if is it true that: *What is the* $\max\{Cov.den_V(B)\}$ *overall convex bodies **B** in the plane? And in particular, does there exist a convex body B for which to have* $Cov.den_V(B) > 2\pi/\sqrt{27}$ *?*

If B is a triangle or a quadrilateral, is easy to see that $Cov.den_V(B) = 1$. Therefore, triangles and quadrilaterals are no longer candidates to attain the $\max\{Cov.den_V(B)\}$. It follows from a result of [5] that every planar centrally symmetric convex body ***B*** contains a centrally symmetric convex hexagon Hexa, for which to have $Area(\text{Hexa})/Area(B) \geq 2\pi/\sqrt{27}$. Since Hexa tiles the plane in a lattice-like manner, have that, $Cov.den_V(B) \leq Cov.den_V^L(B) \leq 2\pi/\sqrt{27}$ for every centrally symmetric convex body **B**. If **B** is a circle have that $Cov.den_V(B) = Cov.den_V^L(B) = 2\pi/\sqrt{27}$.

Open Problem 1([12]). *For every two-dimensional convex body we have that* $Cov.den_V(B) = Cov.den_V^L(B)$.

The upper limit currently known is given in [5] and is $Cov.den_V(B) \leq 1.2281772...$ for every convex body B in the plane, which is an improvement of the previous results 1.23760430... given in [13], see also [6].

The open problem given above can also be given for any dimension, but we are focusing on centrally symmetric convex body.

Open Problem 2 ([13], [8]). *For every centrally symmetric convex body B we have that* $Cov.den_{\underset{Cong}{\mathrm{V}}}(\mathrm{B}) = Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B})$.

Dropping the condition of central symmetry, we can expect only that is true this,

Open Problem 3([13]). *For every convex body B in the plane we have that* $Cov.den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) = Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B})$.

The underlying difficulty behind the above problems is that we cannot rule out the possibility that the most economical covers necessarily contain different pairs of combinations. In [14] are given, many examples of coverings of a convex finite field B whose members cannot be rearranged to cover B without passing it.

The least economical convex sets for lattice covering are the triangles. According to a theorem in [7], we have $Cov.den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) \le 3/2$, for every convex body B in the plane where equality holds if and only if B is a triangle. Most likely the same is true for translational coverings. The problem is invariant under affine plane transformations, so it does not matter which triangle we consider.

Another question is*: Minimum density of a covering of the plane with translates of a triangle is at least 3/2, so* $Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B}) = 3/2$ *holds?*

Also in [2], [9], [15] showed that, for every convex body $B \in \mathrm{R}^n$ have,

$$Cov.den_{\mathrm{V}}(\mathrm{B}) \le Cov.den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B}) \le n \cdot \ln(n) + n \cdot \ln(\ln(n)) + 5n$$

Another question is if: *There is a constant* $k_{(n)}$ *such that* $\forall n \ge 2$, $Cov.den_{\mathrm{V}}(\mathrm{B}) \le k_{(n)}$ *for every convex body* $B \in \mathrm{R}^n$ *?*

The best known general upper bound on $Cov.den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B})$ is given in [3], and is $n^{\log_2^{\left(\log_2^n\right)} + O(1)}$, where B is an arbitrary convex body $B \in \mathrm{R}^n$.

Better bounds have been established for balls and other convex bodies with many symmetries (see [10]).

Open Problem 4 ([1]). *For each covering* B *of* R^n *with convex bodies of (at most) unit diameter and for each* k>1*, let* F (B,k) *denote the number of elements in* B *lying in a ball of radius k around the origin, divided by the volume of this ball. Then* $\lim\limits_{k \to +\infty}\left(\inf\{\mathrm{F}\ (\mathrm{B},\mathrm{k})\}\right)$ *attains its minimum when* B *is the thinnest covering of*

space with congruent balls of diameter one.

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SOME GEOMETRIC NOTES FOR PACKAGING DENSITY

Abstract: *In this paper, we will present a description of the facts so far regarding some results and open problems, of discrete geometry, related to the problem of packaging. Packaging is a very interesting subject in pure mathematics, and mainly in discrete geometry. This topic has a long and rich history, starting from: Kepler, Newton, Lagrange and Gauss, etc.,. Due to its numerous applications and with the help of calculation methods, in recent years it has once again become a very active research area in mathematics.*
Keywords: *convex body, lattice, density, packing*

INTRODUCTION

Packaging problems are the most common problems in the economy, but not only. The whole point is that in a given volume we maximize the number of elements we will be packing, so the density should be satisfactory. So it is clear that we are dealing with optimization: In the case of packaging we need to maximize the number of items to be packaged, so we have to have the best packaging density. Many postal companies, for example, FedEx, etc., calculate shipping costs, related to two factors, weight and volume. Packaging is directly related to these. But regarding the volume, which we want to minimize, or in a given volume we must have as many copies of the objects that will be transported. The packaging type affects cost, we mean that different volumes and weigh more or less and come in different sizes. Packaging directly affects the overall package weight and density, which must be transported.

Discrete geometry should be used for a "good" study of these two problems. In this paper we will think that: The objects we want to pack are convex objects.

Below we list some simple mathematical concepts.

Definition 1.1: *A set **B** is convex if for any two points P, Q $\in$ B the entire line segment PQ is also contained in B.*

Definition 1.2: *A set **B** is a **convex body** if it is convex, compact and* $\mathrm{Int}(B) \neq \emptyset$.

Where Int(*B*)*-is interior of set B.*

Definition 1.3: *A collection* $\mathrm{B}=\{B_1,B_2,\ldots\}$ *of compact sets where* $\mathrm{Int}(B_i)\neq\varnothing,\forall i$ *forms a packing in* $\mathrm{V}\subseteq\mathrm{R}^n$, *if* $\bigcup_j B_j\subseteq\mathrm{V}$ *and* $\mathrm{Int}(B_i)\cap\mathrm{Int}(B_j)=\varnothing$, for $i\neq j$.

Definition 1.4: *If B consists of all translates of a particular set B by vectors belonging to a given lattice* L *, i.e.,* $\mathrm{B}=\{B+\lambda\,|\,\lambda\in\mathrm{L}\}$, *then* B *is said to be a lattice arrangement.*

Definition 1.5: *The density of a collection* B *relative to a limited domain* V *is,*

$$den(\mathrm{B},\mathrm{V})=\frac{\sum_{B\in\mathrm{B}}m(\mathrm{B}\cap\mathrm{V})}{m(\mathrm{V})}$$

where m(*)-is "volume" (area in 2D-case, volume in 3D case, etc.)

Definition 1.6: *The* ***best density*** *of a collection* B *relative to a limited domain* V *called* $den_{\mathrm{V}}(\mathrm{B})=\max\{den(\mathrm{B},\mathrm{V}):\mathrm{B}-packing\}$.

Clearly, we have that, $den(\mathrm{B},\mathrm{V})\leq den_{\mathrm{V}}(\mathrm{B})\leq 1$.

If we restrict our attention to lattice packing's, or to packing's with translates of B, then we obtain the similarly defined notions of the *best lattice packing density* with $den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B})$ and the *best translative packing density* of B with $den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B})$. That is, $den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B})=\sup\{den(\mathrm{B},\mathrm{V}):\mathrm{B}-\text{latice packing}\}$ and

$den_{\mathrm{V}}^{\mathrm{T}}(\mathrm{B})=\sup\{den(\mathrm{B},\mathrm{V}):\mathrm{B}-\text{translative packing}\}$.

For Congruent packings, so in the case where, elements in a package are thought to be of the same product (as they usually are), so the elements to be packaged are in the same size and shape. So elements of a collection $\mathrm{B}=\{B_1,B_2,\ldots\}$ are congruent to a convex body B and $\mathrm{Int}(B_i)\cap\mathrm{Int}(B_j)=\varnothing$, for $i\neq j$.

Definition 1.7: *The density of a collection* B *with congruent elements relative to a limited domain* V *is,*

$$\underset{Cong}{den}(\mathrm{B},\mathrm{V})=\frac{\mathrm{card}\{i:\mathrm{B}_i\in\mathrm{V}\}\,m(\mathrm{B})}{m(\mathrm{V})}$$

where $\operatorname{card}\{i : \mathrm{B}_i \in \mathrm{V}\}$ *is the number of congruent elements of collection* B *that can be packed in* V *and m(*)-is "volume" (area in 2D-case, volume in 3D case, etc..) of B.*

Definition 1.8: *The* ***best density*** *of a collection* B *with congruent elements relative to a limited domain* V *called* $\underset{Cong}{den_{\mathrm{V}}}(\mathrm{B}) = \sup\left\{\underset{Cong}{den}(\mathrm{B},\mathrm{V}) : \mathrm{B} - packing\right\}.$

Clearly, we have that, $\underset{Cong}{den}(\mathrm{B},\mathrm{V}) \le \underset{Cong}{den_{\mathrm{V}}}(\mathrm{B}) \le 1.$

PACKINGS

The elements in a package are thought to be of the same product (as they usually are), so the elements to be packaged are in the same size and shape. Also in this paper we think of the bodies to be packaged as "convex bodies". In fact in this paper we will give the ratio of the total volume of packaged objects to the given volume. The closer this ratio is to "1", the better the packaging, or otherwise, we have the best packaging. So the closer this ratio is to 1, the greater the number of congruent copies that can be packaged in a given volume.

The question arises, if is it true that: for any plane convex body B there exists a centrally symmetric convex body B′ such that $den_{\mathrm{V}}(\mathrm{B}') \le den_{\mathrm{V}}(\mathrm{B}), (\mathrm{V} \subseteq \mathrm{R}^2)$?

A result presented in [10] suggests that the answer to this question is probably negative. It is possible that the worst convex body from the point of view of best packaging in plan is the regular heptagon (the best densest packaging of which is known to have a density of 0.8926 ...; see also [3]). Also in [8] is prove that: For every centrally symmetric convex body B we have that $\underset{Cong}{den_{\mathrm{V}}}(\mathrm{B}) = den_{\mathrm{V}}(\mathrm{B}).$

Another question is: What is $\min\{den_{\mathrm{V}}(\mathrm{B})\}$ over all convex bodies B in the plane?

If take **T** a triangle. It is easy to see that $\underset{C}{den_{\mathrm{V}}}(T) = 1$. Therefore, the $\min\left\{\underset{C}{den_{\mathrm{V}}}(\mathrm{B})\right\}$ cannot be attained by triangles. A triangle presents an example that $\underset{Cong}{den_{\mathrm{V}}}(\mathrm{B}) \ne den_{\mathrm{V}}(\mathrm{B})$. Moreover, [19] proved that in the sense of Baire category, this is true for most convex domains.

In [4] it has been proved that every convex body B plane is contained in a quadrilateral V with $m(\mathrm{V}) \leq \sqrt{2} \cdot m(B)$. Since every quadrilateral tiles the plane, this implies that $den_{\mathrm{V}}(\mathrm{B}) \geq 1/\sqrt{2}$ for every plane convex body B, so also $\underset{C}{den_{\mathrm{V}}}(T) \geq \sqrt{2}/2$, for all two-dimensional convex body. In [11], this result has improved assessment, in 25/32. The best improvement is presented in [10], and it is $den_{\mathrm{V}}(\mathrm{B}) \geq \sqrt{3}/2 = 0.86602540...$ for every plane convex body B. The improving this result, seems very challenging.

The problem becomes easier if we limit our attention to lattice packaging.

According to a theorem in [7], $den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) \geq 2/3$, for every convex body B, where equality holds if and only if B is a triangle. In [8] is proven, that $den_{\mathrm{V}}(\mathrm{B}) = den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B})$ for each centrally symmetric convex body B in the plane.

That is, the density of a package with congruent copies of a centrally symmetric convex body can never exceed the density of the densest lattice packaging. This partially explains why lattices and number-theoretic concepts play a special role in this field.

Open Problem 1. ([12]) This is one of the most important and fascinating open problems in packing and covering in the plane,

$$den_{\mathrm{V}}(\mathrm{B}) = den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) \geq \frac{8 - 4\sqrt{2} - \ln 2}{2\sqrt{2} - 1} = 0.90241418\ ...,$$

where equality holds for some smoothed octagons.

As we said above, in [10], it has been proven that $den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) \geq \sqrt{3}/2$, for every centrally symmetric convex body B. Also through the works of [6] and later by [18] we know that $den_{\mathrm{V}}(\mathrm{B}) \geq 0.89265$ and $den_{\mathrm{V}}(\mathrm{B})$ attains a local minimum at the smoothed octagons. For the 3D case, in [17] used result of [18] to prove that, $1 \geq den_{\mathrm{V}}(\mathrm{B}) \geq den_{\mathrm{V}}^{\mathrm{L}}(\mathrm{B}) \geq 0.46421$. However, it is possible that this lower bound can be improved to $\pi/\sqrt{18} = 0.74048...$, the packing density of the ball.

The corresponding problems in higher-dimensional spaces seem to be hopelessly difficult. The celebrated Minkowski–Hlawka theorem (see [9]) gives a

bound of $den_V^L(B) \geq \zeta(s)/2^{s-1}$, if B is convex and centrally symmetric, where, $\zeta(s) = \sum_{n=1}^{+\infty} n^{-s}$, is Riemann's zeta function, so $\pi^2/6 = \zeta(2) > \zeta(s) > 1, \textit{ for } s \geq 3$.

The asymptotically known general result is presented in [16] who established the inequality $den_V(B) \geq den_V^L(B) \geq c \cdot (s/2^s)$ if B is a convex and centrally-symmetric, provided that $c < \log 2$ and s-is sufficiently large. This bound may well be far from best possible, but even for balls the best known lower estimate, due to Ball [1], is only a constant times better: $den_V(\text{Ball}) \geq den_V^L(\text{Ball}) \geq \frac{(s-1)}{2^{s-1}} \zeta(s)$. For some special classes of convex bodies, including the so-called superballs, see. [15], [14], [5] established essentially better lower bounds.

One of the major difficulties is that in higher-dimensional spaces $den_V(B) \neq den_V^L(B)$ for many centrally symmetric convex bodies B. As a matter of fact, it is generally believed that this is the case for spheres.

Open Problem 2. ([13]) Let Ball_0 the unit ball in $V \subseteq R^n$. There exists a dimension n > 3 such that $den_V(\text{Ball}_0) \neq den_V^L(\text{Ball}_0)$

An interesting observation which is presented to [2] seems to supported of this open problem: For any n ≥ 3, there is an ellipsoid Ell in in $V \subseteq R^n$ such that $den_V(\text{Ell}) > den_V^L(\text{Ell})$.

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MANAGEMENT OF MOTIVATION OF WORK ACTIVITY OF EMPLOYEES OF THE ENTERPRISE

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УПРАВЛІННЯ МОТИВАЦІЄЮ ТРУДОВОЇ ДІЯЛЬНОСТІ ПРАЦІВНИКІВ ПІДПРИЄМСТВА

Abstract. *The article is devoted to the study of theoretical provisions and practical approaches to managing the motivation of employees of the enterprise on the example of the company "Google".*
Keywords: *motivation, work activity, management, staff, enterprise.*

Анотація. *Статтю присвячено дослідженню теоретичних положень та практичних підходів до управління мотивацією трудової діяльності працівників підприємства на прикладі компанії «Google».*
Ключові слова: *мотивація, трудова діяльність, працівники, підприємство.*

Продуктивність і результативність працівників вирішальною мірою залежить від ставлення та зацікавленості до роботи. Зазвичай люди працюють заради грошової винагороди, щоб задовольняти власні потреби. Але людина завжди буде прагнути більшого, ніж просто отримувати заробітну плату, тим більш якщо це кваліфікаційний працівник. Слід відмітити, що деякі робочі місця навіть з високою оплатою не будуть користуватись попитом, через несприятливі умови праці, так само як і комфортні робочі місця, заробітна

плата на яких замала. Тому на сьогоднішній день тема мотивації та стимулювання праці є актуальною для сучасних підприємців та ділових людей.

Вагомий внесок у вивчення теорії та практики управління персоналом та мотивації праці внесли вітчизняні дослідники Балабанова Л.В., Богиня Д.П., Виноградський М.Д., Колот А.М., Савченко В.А., Щокін Г.В. та інші. Також велику увагу питанням удосконалення управління персоналом в сучасному менеджменті приділяли М. Армстронг, Д. Бодді, Р. Дафт, П. Дойль, П. Друкер та інші зарубіжні науковці. Висвітленню питань управління персоналом присвячено роботи [1-9].

Мотивація – це будь-яке спонукання до дії, але для практичних цілей управлінці звужують це поняття, розглядаючи її як процес стимулювання робітників до здійснення ефективної діяльності, що спрямована на досягнення цілей підприємства. Без достатньої мотивації неможливо отримати гарний результат у бізнесі, мати прибуток, тому її так досконало вивчали на протязі усього процесу формування теорії управління. Мотиви – це сили, які спонукають людей діяти таким чином, щоб забезпечити задоволення певної потреби. За кожною людською дією приховано мотив.

Розглянемо підходи до мотивації праці в компанії Google, однієї з найбільших та найуспішних компаній світу. Питання мотивації праці в Google знаходяться на високому рівні, так як підходи до них розроблялись роками. З самого початку засновники хотіли створити щось кардинально нове, щоб у майбутньому стати прикладом для інших, що їм і вдалося. Класична схема роботи, при якій працівник мав тільки обов’язки, вже на той момент вважалася застарілою, тому всю свою історію Google намагалася створити ідеально комфортні умови для праці персоналу, що сприяло б підвищенню продуктивності їх праці.

Компанія Google зібрала найуспішніших професіоналів своєї справи. Кращі програмісти з усього світу вважають за честь працювати в цій компанії. Google цінує своїх співробітників, мотивує та стимулює їх до активної праці. З рядового програміста в провідного спеціаліста може вирости кожен, для цього потрібно лише прагнення.

Google придбав для себе величезну та обдаровану робочу силу по всьому світу, яка обслуговує мільйони людей по всій земній кулі. Однак ще більш взірцевим є те, як Google підтримує та розвиває своїх співробітників, при цьому маючи змогу використовувати їх унікальні та видатні ідеї та продукти.

Що стосується мотивації своїх співробітників, можна сказати, що Google виділяється серед решти. Google було визнано «найкращою компанією для роботи» у 2014 році [8]. Організація очолила список уп'яте.

Різні офіси та кампуси Google по всьому світу відображають всеосяжну філософію компанії, яка є нічим іншим, як «створити найщасливіше і найпродуктивніше робоче місце у світі». Google дозволяє багатьом із своїх сотень інженерів програмного забезпечення, ядра свого інтелектуального капіталу, створювати власні столи чи робочі станції з того, що нагадує великі Tinker Toys. деякі мають стоячі столи, навіть мають прикріпленні бігові доріжки, щоб вони могли ходити під час роботи [9].

Щомісячний гонорар рядових співробітників компанії починається від $10.000, зарплата топових менеджерів тримається в таємниці, але і вони навряд чи ображені [7]. Компанія ввела ще й практику безкоштовного харчування – в радіусі 50 метрів від офісу завжди є кафе або їдальня, що обслуговує співробітників безкоштовно. Наявна також безоплатна медична допомога [4]. Google також надає своїм співробітникам безкоштовний автомобіль [6].

Отже, як показує досвід Google, щасливі і задоволені співробітники є основою сучасного бізнесу, необхідною умовою прибутковості та рентабельності компанії. Від співробітників очікується результат, і для його досягнення керівництво компанії повинно створити необхідні умови, а саме позитивний імідж компанії, в якій хотілось би працювати, високу заробітну плату, комфортні умови праці та ін.

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PSYCHOLOGY, PEDAGOGY AND EDUCATION

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COVID-19 PANDEMIC - CHALLENGES AND IMPACT ON DEMOGRAPHIC PROCESSES IN BULGARIA

Abstract. *The development of the COVID-19 pandemic shows the unequivocal unpreparedness of modern societies for rapid and effective intervention. The cause of the pandemic was a completely new stranger, rapidly changing. There is a strong presence of direct economic impacts on the demographic consequences of the Covid-19 pandemic, and they are reflected not only in the global collapse of individual economies, but also in their indirect impact on individual elements of the complex "demographic impacts". The socio-psychological sphere and its impact turned out to be no less serious on the results of the consequences occurring in the demographic picture.*

Keywords: *COVID-19, pandemic, directions of impact, impact*

INTRODUCTION

The development of the COVID-19 pandemic shows the unequivocal unpreparedness of modern societies for rapid and effective intervention. This applies both to the small poor and semi-poor countries and to the colossi of the modern economy. Such unpreparedness was characteristic of authoritative world organizations such as the World Health Organization (WHO) and the United Nations (UN), but also of the economic flagships World Bank, World Bank for Reconstruction and Development, Monetary Fund and many others. Apparently, the 100-year time lag of the COVID-19 pandemic against the Spanish flu (1920) and its subsequent demographic and socio-economic consequences were forgotten. The lost public sensitivity has led to fruitless attempts at various restrictive measures being introduced in individual countries. In many cases, they are markedly segregating, but this has not limited the spread of the pandemic.

At the same time, one cannot fail to note the fact that the cause of the pandemic was a completely new stranger, rapidly changing. There was no specific therapy for the disease he caused, various drug regimens were used, which had to be fundamentally changed in some cases. An effective vaccine as a panacea only 1-2 months ago was in the realm of the very distant future. At this stage, expectations are supported by the presence of more than one or two such highly effective vaccines.

However, questions remain about the long-term efficacy of the vaccine, the speed of the developed immunity and the possible side effects of the different vaccines. The WHO's warning of a possible third wave only heightens concerns about the future of socio-economic demographic development.

The most general review allows us to develop, as a working version, the following scheme for the directions of impact of the COVID-19 pandemic.

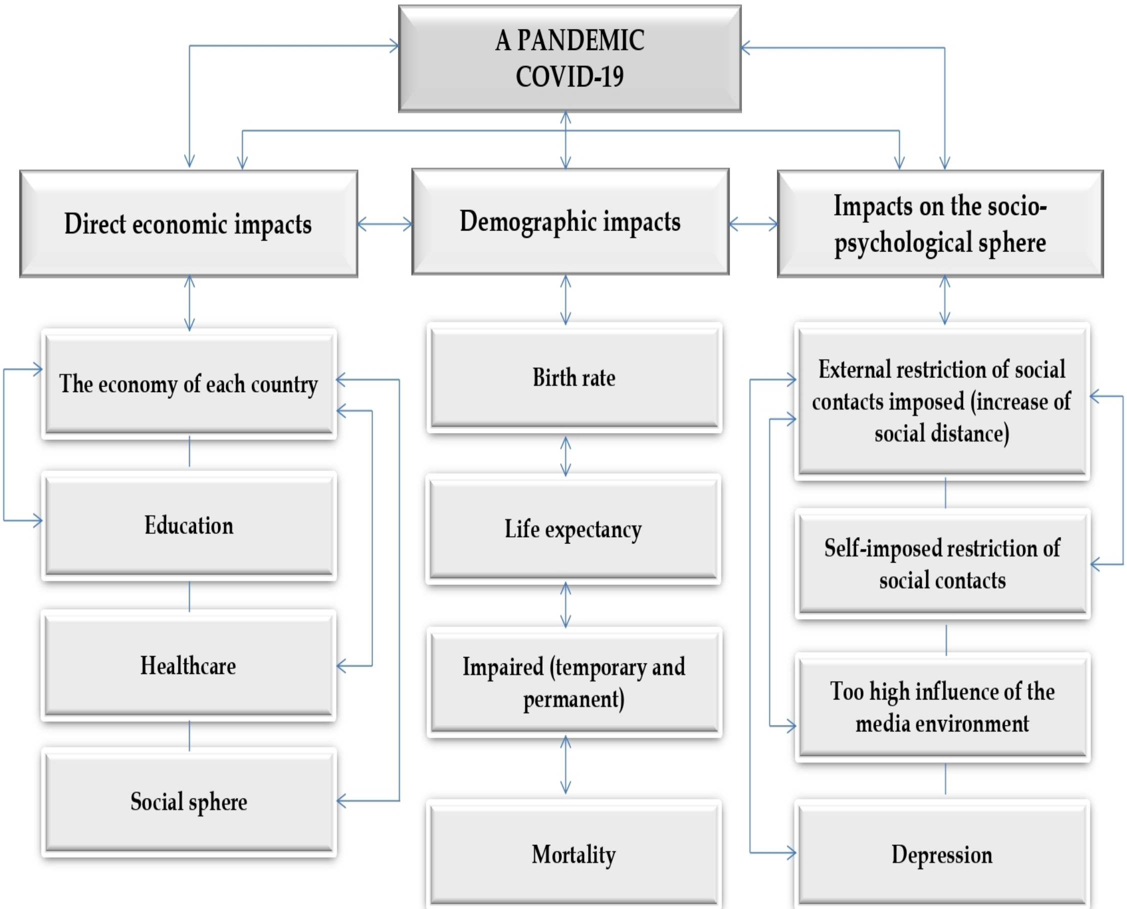


Figure 1. Directions for the impact of the COVID-19 pandemic

As can be seen, demographic processes are influenced by a complex of factors of economic and socio-psychological nature. The strength of the impact of the outlined complex is undoubtedly greater than the strength of each of them assessed separately.

At the same time, in each country it is important to balance its economy from a territorial point of view. Unfortunately, Bulgaria is characterized by serious imbalances in this regard. For example, we will use some comparisons with data for the country, for Shoumen District and for Shoumen Municipality .

For example, the number of live births in 2015-2019 decreased for the country by 4,412 live births. For Shoumen District this decrease is by 186 live births, and for Shoumen Municipality by 138 (The administrative-territorial structure of Bulgaria incl. three levels: total for the country, planning regions - 6, districts - 28, municipalities (variable over the years). The municipality of Shoumen is characterized by a constant presence in the administrative structure in the analysis of national statistics, but as for other municipalities the information does not always reach the depth as shown for the districts and the country).

It is surprising that for the first 10 months of 2020 in the Municipality of Shoumen 72 more children were born compared to 2019.

Table 1. Number of live births for the period 2015 – 2020

year	*Total for the country*	*Shumen district*	*Municipality of Shumen*
2015	65 950	1 600	825
2016	64 984	1 568	794
2017	63 955	1 409	675
2018	62 197	1 451	726
2019	61 538	1 414	687
2020	59 086	1225	610

Source: NSI

This once again supports the position that in the study and analysis of complex results, it is necessary to look for the roots of what is happening, including in the territorial characteristics. A clear example in this respect is the unemployment rate, a key indicator of employment and employment policies.

It can be convincingly argued that the problems in this direction characteristic of the state of the values of the indicator "unemployment rate" from the point of view of the center-periphery are indicative of the favored position of the center.

First of all, we would like to note the significant presence of direct economic impacts on the demographic consequences of the Covid-19 pandemic. They are expressed not only in the global collapse of the economies of individual countries, but also in their indirect impact on individual elements of the complex "demographic impacts".

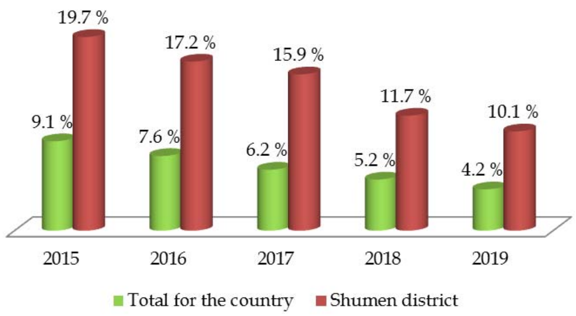


Fig. 1 Unemployment rate or the period 2015 – 2019
Source: NSI

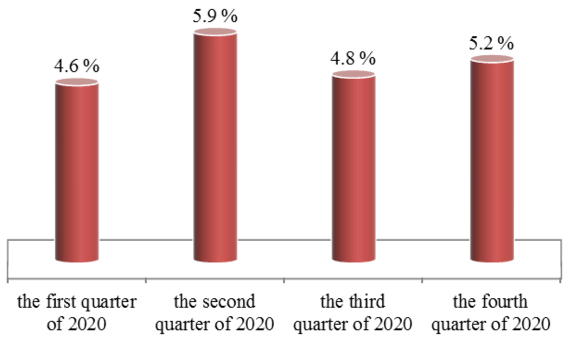


Fig. 2 Unemployment rate for 2020
Source: NSI

Changes in the economic base of the countries of Central and Eastern Europe during the period of transformation of societies in these countries, led to different in depth and duration of economic shocks, incl. high unemployment rates, hitherto unknown. Due to various reasons, Bulgaria lost an impermissible amount of time and public energy wandering between different extremes and extremely high levels of emigration.

According to various information sources (NSI, sociological research), the country has lost about 1 million emigrated young people. Healthcare, the education system and the social sphere have long, and to some extent until recently, been funded on a residual basis. Chronic underfunding and delays in health and education reform have rather hampered the development of these systems.

The implemented health reform turned out to be a complete failure. The above shows the importance of the direct economic impacts on the results related to the impact of the demographic situation and the subsequent changes in it.

The impact of the socio-psychological sphere turned out to be no less serious on the results of the consequences occurring in the demographic picture. In this case, we find a clash of individual rejection of what is happening in the environment and complete closure in oneself. As a result, there is a consistently high share (almost 50% of respondents - Trend Agency) of deniers of the Covid-19 virus, supporters of various conspiracy theories.

The chosen patterns of behavior of this group are consciously confronted with the proposed restrictions on social contacts, wearing masks and more. similar. This

complicates and hinders the measures applied at national and local level. At the same time, these measures are perceived as a forced increase in social distance.

The demographic impacts of Covid-19, unlike the other two groups, can be measured from a selected time point. In addition, their meters have established methodologies and internationally agreed values. As a result, international comparisons and analyzes are possible for the effectiveness of different policies after the birth rate for which there are accurate indicators (number of births and birth rate).

The complex indicator of life expectancy is essential for the quality of life in each country, its prognostic value based on the measures included in its determination indicates their development in individual countries. Of particular importance is the indicator of disability (temporary or permanent).

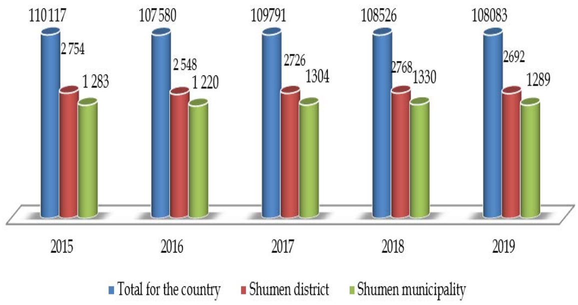


Fig. 3 Deaths for the period 2015 – 2019
Source: NSI



Fig. 4 Deaths in Bulgaria by months for 2020
Source: NSI

Covid-19 is accompanied by the development of short-term (up to 6 months) or long-term damage to the lungs and cardiovascular system. At this stage of the pandemic, no one can predict these injuries.

Mortality, and in particular the mortality rate, in addition to assessing other indicators for a more sound and evidence-based assessment of social policy.

CONCLUSION

Among other things, the values of the above indicators allow us to assess policies and activities during the Covid-19 pandemic. This allows evidence-based policies and measures to be developed.

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PENETRATING EYE INJURY, A CASE REPORT IN ALBANIA

Abstract. *Ocular trauma is one of the most common ophthalmic emergencies. Ocular trauma can be with open globe injury or blunt trauma. An open globe injury, make the prognosis poor for visual acuity, especially if it is present an intraorbital foreign body. The case that is reported in this article is a case of an open globe injury of a 27 years old male with a shotgun. The patient came to our clinic 10 days after the trauma. The scleral wound was repaired in another clinic, 7 hours after the trauma. In examination CT scan was done and it shows the presence of a metallic foreign body in the nasal lower orbit with the dimension of 0.2 mm. The patient was vitrectomized immediately. During surgery a diagnosis of double penetrating trauma was confirmed and the exit wound was near the entrance wound. During vitrectomy a vitreous detachment was induced. The retinal hole was laser photocoagulation in the level of exit wound. In the entrance wound we applied cryopexy. Three weeks after the intervent, the best correction visual acuity of the patient was 1/10. In 10 months follow-up the best correction visual acuity of the patient was 3/10.*

Keywords: *penetrating eye injury, open globe, foreign bodies, vitrectomy.*

Introduction

Ocular trauma with open globe and presence of intraocular foreign body are the cause for blindness and visual loss (Odebode, Ademola-Popoola, Ojo, & Ayanniyi, 2005) (Rahman, Maino, Devadason, & Leatherbarrow, 2006). In the US Eye Injury Database and pellet guns account for nearly 6% of all ocular injuries (Khoueir, Cherfan, & Assi, 2015), (Kuhn, Morris, Witherspoon, & Mann, 2006) . Other articles have reported the severity of trauma in the visual outcome after the eye repair (Rahman et al., 2006) (Ben Simon, Moisseiev, Rosen, & Alhalel, 2011) (Isaac, Ghanem, Nascimento, Torigoe, & Kara-José, 2003). The poor prognosis depends on the time of foreign body removal and by the surgical techniques. (Schmidt, Broman, Hindman, & Grant, 2008) (Fujikawa et al.,2018). In our case report we report the visual outcome of a double penetrating eye injury with intraocular foreign body.

Result

Mr. Elton was first examined at Our Lady of Good Counsel Clinic on 14/12/2020 with chief complaint of loss of vision in the right eye following injury with a shotgun 10 days back. Emergent treatment and primary sclera wound repair were done elsewhere about 7 hours after trauma.

On examination in our clinic, his best-corrected visual acuity in the right eye was perception of light and 10/10 in the left eye. Intraocular pressure with

applanation tonometer was 08 mmHg in the right eye and 18 mmHg in the left eye. Examination of the anterior segment was done with slit lamp. In the slit lamp the right eye showed repaired sclera wound at 4 o clock position about 1 mm posterior to the limbus. In the anterior chamber a 3 mm hyphemia and an early cortical cataract was notice.

The posterior segment was exanimated with indirect ophthalmoscope, which revealed vitreous hemorrhage. Fundus examination for the left eye revealed normal optic nerve head and normal macular region.

Orbital computed tomography (CT) scan revealed the presence of a foreign body that was localized on the posterior nasal upper orbit. Skull X-ray confirmed a metallic foreign body with dimension of 0.2 mm. A B-scan sonography was done to the patient and a signal with high density and vitreous opacity was revealed in the right yes.

Diagnose of a penetrating eye injury with the presence of intraorbital foreign body was set, and the patient was vitrectomized immediately. During the intervent the presence of a dense vitreous and pre–retinal hemorrhage was evident.

During the surgery, a vitreous detachment was induced, and the vitreous was detached from the disc margin. The vitreous was separated from the exit wound and the retina near that was photocoagulation with laser. In the level of entrance wound we applied cryopexy. To prevent endophthalmitis an intravitreal injection with antibiotics was done. The intravitreal injection had vancomycine 1 mg/0.1 mL and ceftazidime 2 mg/01 mL.

The patient's BCVA recovered to 1/10 three weeks postoperatively, and 3/10 at 10- month follow-up.

Discussion

This is a case of an intraorbital foreign body in a penetrating eye injury. The prognosis was poor due to many cases; one of them was the time in which the foreign body was removed.

Vitrectomy in a case with the presence of an intraorbital foreign body and a penetrating globe injury is a complicated surgery. This because the vitrectomy is associated with high risk of complication and endophthalmitis (Cui, Li, Wang, & Shi,

2018) (Page, Gupta, Jenkins, & Karcioglu, 2016). The presence of foreign body (size, location, and chemical structure) can be detected by orbital CT. The decision to remove or not the foreign body depends on the structure and location of foreign body (Cui et al., 2018), (Pinto et al., 2012). Different articles has shown the use of transcranial approach in removing an intraorbital foreign body (Yeh, Colyer, & Weichel, 2008) but this type of surgery need the help of a neurosurgical doctor, as it increase the risk for intracranial complications (Cui et al., 2018). In our case, we performed a transconjuctival approach to removal the intraorbital foreign body. We incised the conjunctiva along the limbus. The patient's BCVA recovered to 1/10 three weeks postoperatively, and 3/10 at 10- month follow-up. The patient had a normal intraocular preassure and the cosmetic part of the eye was good.

Conclusion

As a conclusion we can say that the most important causes that influence the visual outcome is the time of removal of foreign body and the surgical approach. In our case we use a transconjuctival approach to remove the intraorbital foreign body. The patient's best correction visual acuity was 3/10 at 10-month follow-up.

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THE ZERO-SUFFIX DERIVATION IN THE ALBANIAN LANGUAGE

Abstract. *Considered the most productive way for the coining of new words, affixation remains as one of the most important objects of the scientific researched in the Albanian language as well. Generally, there are accepted these types of affixation in the Albanian language: prefixation, suffixation, prefixation and suffixation simultaneously. In the latest Albanian Grammars and in some recent studies there is accepted another special way, the derivation without suffix, or, as called by these scholars, the zero-suffix derivation. For the theoretical significance of the interpretation of this kind of derivation, on one side, and for its practical relevance, on the other side, I have considered it as a very important study object of this paper which can shed light on theoretical issues concerning word-formation. The hypothesis of this article that the zero suffix derivation should be analyzed as a kind of conversion, will be supported by an analysis of the Albanian language data within the framework of the construction grammar.*
Keywords: *conversion, affix, suffix, derivation, zero morpheme, morphology*

INTRODUCTION

The derivation without affixes is accepted as one type of derivation in *Gramatika e gjuhës shqipe 1* [Grammar of Albanian language 1] (2002). As instances of this model of word-formation are classified the nouns *mund-i*, ‘effort’, *hap-i*, ‘step’ *shkul-i* ‘plucking’, formed from the respective verbs: *mund* ‘can’, *hap* ‘to open’, *shkul* ‘to pull off’, as well as the verbs *huaj* ‘to loan’ *krip* ‘to salt’, *ndryshk* ‘to rust’, *kyç* ‘to lock’, *sit* ‘to sift’, *shosh* ‘to sift’, etc., formed from the corresponding nouns *hua* ‘loan’, *kripë* ‘salt’, *ndryshk* ‘rust’, *kyç* ‘key’, *sitë* ‘sieve’, *shoshë* ‘sieve’. The definition of the formation of these words as a kind of derivation is motivated by the lack of the corresponding suffix, which “becomes here an expression of the meaning that the derived word has acquired in relation to its motivational stem” (Agalliu et al., 2002:68). Such an interpretation can be found in similar cases of English as well (see Aronoff & Fundeman, 2011; Andersen, 1992). In the monographic study *Formimi i foljeve në shqipen e sotme* [The verb formation in the present Albanian] (2008) it is claimed that these cases should be interpreted as derivation with zero suffix (Buxheli, 2008:71). In this study has been further developed the careful assertion of the authors of *Gramatika ...1* [Grammar …1] that the absence of the suffix becomes a marker of the meaning of the new word. She brings the relevant arguments to support the existence of zero-suffix:

i) the suffix in these cases is unrealized phonologically, it is easily implied and often can be easily replaced by the phonological one: *shosh – shosh**it** ‘to sift’, krip – krip**os** ‘to salt’*;

ii) zero suffixes, like all suffixes in general and the derivational ones in particular, can serve as lexical heads, because they create a new word, which belongs to a different syntactic category from the one of the base stem;

iii) the lexical stem of these words often undergo phonetic changes during the word-formation process, such as the fall of the unstressed final vowel or the change of the thematic vowel length, the same way as it happens in the process of the affixation.

ZERO-SUFFIX AND ZERO DERIVATION

In order to accept the existence of the zero-suffix derivation, it must be proved that in this case we are dealing with a morphological word-formation type, as the word-formation with suffixes, where each suffix occupies a certain place and realize the same function within a certain morphological model. Being morphological is apparently taken for granted from the respective authors mentioned above.

Here I will contradict the way of argumentation used by Buxheli (2008). First, the assertion that the zero-suffix is easily implied can neither be testified nor be proved. The cases when the suffix can be added to e verb stem with no suffix for the creation of e new form of the same verb, such as shoshit < *shosh* + *-it ‘sift’, sitis< sit* + *-is ‘sift’, kripos* < *krip* + *-os,* ‘salt’, do not prove that the added suffix *(-it, -is, -os*) has replaced the zero-suffix. On the contrary, beside the non-morphological model of the formation of verbs from nouns, we also have the presence of the morphological model of verb formation by means of the three corresponding suffixes. It will also be kept in mind that the forms with the corresponding suffix semantically are not identical to the forms without the suffix and cannot always be used interchangeably.

(1) *a. Dëshmitë që M. Barleti mblodhi nga burimet e shumta, […]* ***i shoshiti*** *dhe i plotësoi me literaturën, që ai gjeti, për t’i lidhur dhe shpjeguar ngjarjet.*

‘The evidence that M. Barleti gathered from numerous sources, […] he **sifted** and supplemented with literature he found to connect and explain the events.’

*b. * Dëshmitë që M. Barleti mblodhi nga burimet e shumta, […] i shoshi dhe i plotësoi me literaturë …*

This can prove that the corresponding suffix *-it* has not replaced any zero suffix, but creates a new verb with a different semantic function.

Second, the role of the suffix as a lexical head is not only related to the fact that they form a new word, but the position of the suffix as a lexical head is predefined in accordance with a certain morphological model, which expresses a systematic paradigmatic relationship. It means that the base stem and the new word created by adding it a certain suffix are part of a systematic paradigmatic relationship. For example, the verb *largoj* 'remove' and the noun *largim* 'outgoing', formed by it, are part of two respective paradigms: respectively the verbs on *-oj* and the nouns on *-im* .

verbs			**nouns**	
largoj	'remove'	–	*largim*	'outgoing'
afroj	'near'	–	*afrim*	'approach'
besoj	'believe'	–	*besim*	'trust'
lexo j	'read'	–	*lexim*	'reading'
nxitoj	'hurry'	–	*nxitim*	'hurry'

Here we can talk about a morphological model of word formation, which we can present by the following schema:

(2) **<[X**$_{V}$ **-im]**$_{N}$ 'the action according to the V>

In X position can appear any verb with o-final stem. The set of verbs with *-o* and that of nouns with *-im* not only enter into a paradigmatic relationship thanks to the suffix *-im* that joins the verb stem, but this relationship is also systematic; from every verb with o-stem can be derived an *-im*-stem noun. The corresponding nouns are also semantically motivated by the verb stem: 'the action according to the V'. The formal word-formation model corresponds to a semantic correlation for all members of the two paradigmatic sets. Here can be added the grammatical component: the change of syntactic category from verb to noun, which is a common feature of all units of the right group.

Now let take a deeper view on the cases accepted as creations without suffix or with zero-suffix. By accepting the zero-suffix as a lexical head we will be able to talk

about a formal opposition between the input units and the output ones of the morphological process, where the output units also have the zero-suffix present. So we will have:

nouns			**verbs**	
hua	'loan	–	*hua-j*	'to loan'
kripë	'salt'	–	*krip*	'to salt'
ndryshk	'rust'	–	*ndryshk*	'to rust'
sitë/shoshë	'sieve'	–	*sit/shosh*	'to sieve'
i trashë	'thick'	–	*trash*	'to thicken'
i kuq	'red'	–	*kuq*	'make red' etc.

The nouns of the left group correspond to the verbs of the right group, in the morphological structure of which the zero-suffix is present. This could be the formal schema:

(3) **$[X_N\ \text{-}\varnothing]_V$**

To admit that here we are dealing with a paradigmatic relationship between too, the two sets, the nouns and the verbs, must share a common semantic relationship, where the verbs of the right hand group can be motivated semantically by the names of the left hand group. From the analysis of each of the above respective cases it is difficult to prove the existence of such a model:

huaj 'to loan' = 'take a N (loan)';

krip 'to salt' = 'add N (salt)';

ndryshk 'to rust' = 'getting N (rust)';

sit, shosh 'to sieve' = 'to put throw a N (sieve)'.

As can be seen, the cases from the Albanian language confirm that these verbs have a wide range of meanings (Aronoff & Fundman, 2011:141). The same can be said for the names *hap* 'step', *mund* 'effort' *shkul* 'pull' etc., formed from the corresponding verbs *hap* 'to step', *mund* 'to can', *shkul* 'to pull'. It is impossible to argue the existence of a morphological relationship between the base stems and the output units.

Third, the phonetic changes that appear in the new stem cannot be seen as changes influenced by the zero-suffix. No verb in the Albanian language can have a stem that ends with an unstressed schwa */ë/* [ə], so it is quite normal that the final *-ë* of the noun stems *kripë, shoshë, sitë* falls in the final position of the verbal stem derived from them. Even the change in the thematic-vowel length is related to the fall of *-ë* and not to the zero-suffix.

CONVERSION IS NOT ZERO SUFFIXATION

For the reasons mentioned above, it is more reasonable to deny the derivation with zero-suffix in the Albanian language, and to treat the corresponding cases of the derivation with no affix as conversion. The corresponding schema will be:

(4) $\mathbf{[X_Y]_Z}$ **;** where: Y = {N, V, Ad}, Z = {N, V, Ad}

In the Albanian linguistics, conversion is conceptualized as a special way of word formation for the cases when a word passes to another syntactic category as a result of the syntactic conditions of its use (Agalliu et al., 2002:78). According to this statement, this way of word formation has contributed to the formation of prepositions from adverbs: *brenda* ‘in’ from *brenda* ‘inside’, *drejt* ‘toward’ from *drejt* ‘straight’, etc.; adverbs from nouns: *mot* ‘next year’ from *mot* ‘weather’, *sheshit* ‘open’ from *shesh* ‘square’; prepositions from nouns: *anë* ‘by’ from *anë* ‘edge’, *rreth* ‘around’ from *rreth* ‘circle’; nouns from adjectives: *e bukura* ‘beauty’ from *e bukur* ‘beautiful’, *të ftohtët* ‘cold’ from *i ftohtë* ‘cold’, *të lashtat* ‘crops’ from *i lashtë* ‘ancient’, *i ri* ‘young people’ from *i ri* ‘new’; adjectives from names: *kyç* ‘important’ from *kyç* ‘key’, *francez* ‘French’ from *francez* ‘frenchman’; pronouns from nouns: *gjë* ‘something’ from *gjë* ‘thing’, *njeri* ‘anyone’ from *njeri* ‘man’.

It is a debatable issue if a word can switch its grammatical category as a result of the syntactic use. It is hard to be accepted that a noun can be used instead of an adjective, or a verb instead of a noun and vice versa. Only in the cases of nominalization, when there is an ellipsis, adjectives or pronouns can be used in the noun position. But this is not a process of new word creation. The adjectives or the pronouns do not switch their grammatical category; they are just provided with noun markers. Due to its semantic-grammatical features, one part of speech cannot be used instead of another part of speech.

This permission occurs when cognitive processes come into play, which enable that on the basis of the semantics and the respective categorical meaning of a lexical unit, e.g. of the name, to conceptualize a different categorical meaning, e.g. that of a verb. This conceptualization affects the grammatical component, namely the syntactic category of the word, but also its lexical meaning. To clarify this we let see the name *kyç* ‘key’, which marks a tool used to securely lock a door etc. With this tool a certain action is performed, usually its rotation in the lock, as a result of which the door closes steadily. The connection between the tool and the action performed by it is used to name the tool by its respective action: *kyç* ‘key’: tool – *kyç* ‘to lock’: the action performed with this tool. We are dealing with a linguistic metonymy which is the result of a genuine cognitive process. Thanks to this cognitive act, being expressed figuratively, the corresponding verb *kyç* ‘to lock’ is cloned from the name *kyç* ‘key’. This means that in this case there is no switch of the name into verb, but there is a formation of the verb according to the corresponding noun without the participation of morphology. So the verb is conceptualized not according to a morphological model but according to a metonymic cognitive process. The same phenomenon occurs when the corresponding adjective *kyç* ‘key’ is derived from the name *kyç* ‘key’: *problem kyç* ‘key problem’, *moment kyç* ‘key moment’, etc. Part of the semantics of the name *kyç* ‘key’ is its central/great importance in relation to other parts of the door that play a role in closing or opening it. This semantic feature of the name is used to obtain the corresponding adjective: problem *kyç* ‘key problem’ does not mean ‘problem that opens or closes something’, but ‘crucial problem, very important for the realization of a phenomenon or a process’.

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IL CLIL NELL'INSEGNAMENTO DELLA L2: PROSPETTIVE E IMPLEMENTAZIONE

Abstract. *Il CLIL si basa su un apprendimento integrato di lingua e contenuti per cui necessita di un insegnamento concreto e ricco di supporti al fine di stimolare la motivazione degli alunni, facilitare il transfer di competenze, promuovere l'uso della lingua in situazioni culturali e garantire l'acquisizione di un uso consapevole e di una comprensione globale della lingua. In questa ricerca, attraverso un questionario somministrato agli insegnanti della L2, vogliamo testare la conoscenza e l'uso della metodologia CLIL nell'insegnamento della lingua italiana nelle scuole della Regione istriana.*
Keywords: *CLIL, lingua italiana, Regione istriana, insegnanti L2.*

1. IL METODO CLIL: UN NUOVO TRAGUARDO DIDATTICO?

Usare una lingua è una competenza molto ampia che va oltre la pura conoscenza delle parole e dell'impianto grammaticale e impone frasi formulate a perfezione. Il desiderio di misurare il successo in termini di risultati non prende in considerazione l'altra qualità di apprendimento, forse più vantaggiosa: il linguaggio come strumento di comunicazione. Questo stato di cose può essere colmato con l'approccio CLIL (Content and language integrated learning) ovvero Insegnamento integrato di lingua e contenuto che implica l'integrazione dell'adozione di una lingua straniera e l'introduzione di un nuovo contenuto. La metodologia CLIL rappresenta un'innovazione didattico–metodologica relativamente recente che investe sia il campo della glottodidattica che il campo delle didattiche disciplinari (DNL : discipline non linguistiche), di ambito scientifico e di ambito umanistico (Cinganotto, 2018). Il CLIL necessita di un insegnamento concreto e ricco di supporti al fine di stimolare la motivazione degli alunni, facilitare il transfer di competenze, promuovere l'uso della lingua in situazioni culturali e garantire una comprensione globale della lingua.

I concetti sono correlati al tipo di linguaggio e alle attività che sostengono l'apprendimento, invece che alla lingua stessa, per cui non è un paradosso sostenere

che si impara più una lingua quando non ci si concentra che quando ci si fissa su di essa (Marsch et al., 2009).

Uno dei suoi numerosi vantaggi è la capacità di fare appello alle capacità cognitive e creative degli apprendenti, offrendo materiali caratterizzati da input comprensibile (Krashen, 1987) e autentico (Cherubini, 2016). In altre parole il linguaggio viene appreso in un contesto particolare dove gli studenti memorizzano più facilmente i concetti che rimangono nella loro memoria più a lungo.

Gli obiettivi del CLIL, come visto, includono quattro competenze linguistiche: l'acquisizione del contenuto, della comunicazione, dell'abilità di apprendere e della cultura (content, communication, cognition, culture). Il contenuto indica la progressione delle conoscenze e delle abilità di un curriculum predefinito; la comunicazione è l'uso della lingua in situazioni comunicative; l'abilità di apprendere concerne lo sviluppo di capacità che portano alla comprensione dei concetti concreti e astratti; la cultura porta alla consapevolezza del pensiero proprio e altrui (Darn, teachingenglish.org.uk/article/clil-a-lesson-framework).

2. LA POLITICA LINGUISTICA IN CROAZIA

In base ai dati del 2012 (in Manić, 2016: 30), tutti i paesi europei offrono una forma di istruzione in cui le materie non linguistiche vengono insegnate in due lingue diverse o in una lingua straniera (CLIL) con eccezione della Danimarca, l'Islanda e la Turchia. In alcuni paesi, come Belgio, Portogallo e Cipro, il CLIL è condotto come programma pilota, mentre in Italia (dal 2010) tutti gli studenti dell'ultimo anno di istruzione secondaria hanno l'obbligo di scegliere una materia in lingua straniera. Le lingue utilizzate come lingue d'istruzione, sono più spesso l'inglese, il francese e il tedesco, ma anche l'italiano e lo spagnolo. Lussemburgo e Malta sono gli unici paesi che offrono questo programma in tutte le scuole e in tutti i sistemi educativi.

Questo modello di immersione linguistica (language immersion) viene chiamato da molti ricercatori anche strong form (McCarty, 2012; Roberts, 1995; Baker, 2007), perché è il modello che vanta grande successo tra gli studenti di lingua della maggioranza. È per lo più usato nelle scuole internazionali con l'insegnamento di lingue socialmente desiderabili o prestigiose come l'inglese. L'educazione dinamica bi/multilingue è implementata attraverso programmi di insegnamento

bilingue in cui, insieme alla lingua croata, l'insegnamento si svolge in una seconda lingua utilizzata per l'apprendimento di lingue e contenuti. L'attuazione del programma CLIL che Beatens Beardsmore (2002) considera il modo migliore per il mantenimento di una politica linguistica rivolta allo sviluppo del multilinguismo, è prevista dalla Legge sulle modifiche e aggiunte alla Legge sulla educazione e istruzione in scuole elementari e secondarie (Zakon o odgoju i obrazovanju u osnovnoj i srednjoj školi, Gazzetta Ufficiale, 126/2012, articolo 8). Repko (2009) afferma che l'istruzione interdisciplinare promuove le capacità cognitive e lo sviluppo delle intuizioni, la capacità di problem solving, la fiducia in se stessi e l'autopromozione.

La politica linguistica della Repubblica di Croazia si allinea alla politica dell'UE e si basa quindi sul rispetto della diversità linguistica di tutte le sue nazionalità. Dal momento che il Parlamento europeo nel 2013 ha adottato una Risoluzione sulle lingue europee a rischio di estinzione (Gazzetta Ufficiale, 93/2016:52) anche la Croazia doveva volgere il proprio interesse verso la salvaguardia e la promozione della diversità linguistica e culturale del patrimonio statale (Nacionalni okvirni kurikulum za predškolski odgoj i obrazovanje te opće obvezno i srednjoškolsko obrazovanje, 2010).

I membri delle minoranze nazionali hanno il diritto costituzionale all'istruzione nella loro lingua madre e scrittura a tutti i livelli di istruzione: dalla scuola dell'infanzia all'università, come garantito dall'articolo 7 della Legge sulla educazione e istruzione in scuole elementari e secondarie (Zakon o odgoju i obrazovanju u osnovnoj i srednjoj školi, Gazzetta Ufficiale, 87/2008) e l'articolo 1 della Legge sull'istruzione e la formazione nella lingua e nella scrittura delle minoranze nazionali (Odluka o proglašenju Zakona o uporabi jezika i pisma nacionalnih manjina u Republici Hrvatskoj, Gazzetta Ufficiale, 51/2000). Va notato che tali diritti esistono in un piccolo numero di paesi dell'UE.

3. METODOLOGIA DELLA RICERCA

3.1. Finalità e ipotesi

Dopo una primissima ricerca pilota abbiamo pensato di indagare la conoscenza del metodo CLIL in maniera più approfondita sottoponendo a indagine

un numero rilevante di insegnanti di italiano della Regione Istriana. La finalità principale è quella di indagare, ricercare e valutare l'atteggiamento verso lo studio della L2 non tanto rivolto al mero insegnamento delle strutture linguistiche, quanto alla volontà di veicolare contenuti nuovi e la cultura del paese straniero attraverso la comunicazione e l'abilità intrinseca di apprendere. La ricerca prenderà conto di due variabili: V1 – uso di internet nella pratica didattica e V2 – apprendimento integrato di contenuti disciplinari in italiano veicolare. Le considerazioni dalle quali siamo partiti sono riconducibili nelle seguenti tre ipotesi.

I1: Gli insegnanti più giovani e con meno anni di servizio prediligono l'uso di internet.

I2: Gli insegnanti di una fascia intermedia con esperienza lavorativa considerevole integrano l'insegnamento della lingua con contenuti di altre materie del curricolo.

I3: Gli inseganti più anziani, con tanti anni di servizio, non sono propensi ad un uso significativo di internet e si ancorano all'idea che insegnare la L2 significhi fare grammatica.

3.2. Soggetti della ricerca

Nella ricerca sono state elaborate le risposte di 40 docenti di italiano lingua seconda nella Regione istriana. Tra i soggetti prevalgono le femmine, infatti solo 2 (5%) sono maschi, per lo più appartenenti alla fascia d'età tra i 36 e 45 anni (37,5%). Per quanto riguarda gli anni di servizio il corpo docenti è abbastanza giovane, in quanto quasi la metà degli insegnanti hanno meno di 15 anni di esperienza lavorativa (N=19; 47,5%).

3.3. Strumento

Il questionario includeva due variabili: l'uso di internet e i contenuti educativi e istruttivi, ambedue valutati sulla scala Likert, dove 1 indicava il valore più basso e 5 quello più alto. La prima variabile (V1) comprende 6 item con cui veniva valutato l'atteggiamento dei soggetti verso l'utilizzo di internet in classe. Il range del punteggio va da un minimo di 6 a un massimo di 30. La seconda variabile (V2) è costituita da 16 item che valutavano i contenuti disciplinari studiati in classe. Il

punteggio si estende da 16 a 80. Più il valore è alto, maggiore è l'atteggiamento propositivo del soggetto verso l'apprendimento linguistico integrato.

4. ESPOSIZIONE E DISCUSSIONE DEI RISULTATI

4.1. Uso dell'internet nella pratica didattica (V1)

Le risposte alla domanda Quanto usa internet in classe? sono state quasi equamente suddivise fra: ogni tanto (47,5%) e spesso (42,5%). Due insegnanti non usano mai internet (5%) e altri due lo usano ogni ora scolastica (5%). I soggetti che navigano spesso utilizzano la rete preferibilmente per reperire informazioni (M= 3,65; SD= ,93), mentre coloro che usano internet ogni tanto oltre per ricercare dati (M= 3,58; SD= ,84) usano i social network per condividere delle conoscenze (M= 3,53; SD= ,77).

TABELLA 1. Analisi della varianza (ANOVA) dell'uso di internet per età

Età	*media*	*SD*	*F*	*df*	*p*
< di 25 anni	-	-			
da 25 a 35	21,00	3,53			
da 36 a 45	18,47	1,81			
da 46 a 55	19,12	2,36			
> di 55anni	15,43	3,74	3,86	3	0,02

TABELLA 2: Analisi della varianza (ANOVA) dell'uso di internet per anzianità di lavoro

Anni di servizio	*media*	*SD*	*F*	*df*	*p*
< di 5 anni	22,25	2,91			
da 6 a 15	18,00	1,55			
da 16 a 25	18,33	2,58			
da 26 a 35	17,00	2,28			
> di 35anni	17,00	5,29	4,80	4	0,00

Riguardo all'uso dei contenuti nell'insegnamento della L2 (Tabelle 1 e 2), l'analisi della varianza palesa una differenza significativa tra le risposte dei partecipanti all'inchiesta, sia in base alla loro età (F= 3,86; df= 3; p= ,02) che agli anni di servizio (F= 4,80; df= 4; p= ,00). Trasformando la scala Likert in percentuali (1/assolutamente in disaccordo= 0%; 2/in disaccordo=25%; 3/né d'accordo né in disaccordo= 50%; 4/d'accordo= 75%; 5/assolutamente d'accordo=100%) e calcolando la percentuale della media delle risposte notiamo che gli insegnanti tra i

25 e i 35 (70%) anni di età e con meno di 5 anni di servizio (74%) sono quasi assolutamente d'accordo sull'importanza dell'utilizzo di internet nell'insegnamento integrato della lingua straniera, seguiti dai collegi nelle fasce d'età 46-55 (64%) e 36-45 (62%) e con esperienza lavorativa compresa tra i 16 e i 25 (61%) e i 6 ai 15 anni (60%). Tra i colleghi più anziani, invece, di età superiore dei 55 anni (51%) e con da 26 a 35 (57%) o più di 35 anni di servizio (57%) è stata riscontrata una percezione piuttosto neutrale verso l'uso della rete nello studio della lingua, probabilmente dovuta a una scarsa conoscenza delle risorse offerte dalla rete.

Quanto detto conferma la nostra prima ipotesi. I risultati, infatti, dimostrano che gli insegnanti più giovani e con meno anni di servizio prediligono l'uso di internet.

4.2. Apprendimento integrato di contenuti disciplinari in italiano veicolare (V2)

Riguardo ai contenuti i soggetti sono quasi *assolutamente d'accordo* che un buon insegnante di L2 ha bisogno di includere nelle sue lezioni contenuti di altre discipline (M_{spesso}= 4,47; SD= ,80 // $M_{ogni\ tanto}$= 4,42; SD= ,96), della tradizione culinaria (M_{spesso}= 4,41; SD= ,62 // $M_{ogni\ tanto}$= 4,11; SD= 1,05) e di conoscere l'attuale situazione della scuola e dell'educazione in Italia (M_{spesso}= 3,94; SD= ,66 // $M_{ogni\ tanto}$= 4,00; SD= ,67).

Sono *d'accordo* (o quasi) sull'inserimento dei contenuti d'arte (M_{spesso}= 4,29; SD= ,59// $M_{ogni\ tanto}$= 3,95; SD= ,65) e/o storia (M_{spesso}= 3,70; SD= 1,16 // $M_{ogni\ tanto}$= 3,53; SD= ,90), sullo studio integrato della L2 mediante l'elaborazione di un progetto (M_{spesso}= 3,76; SD= ,44 // $M_{ogni\ tanto}$= 4,26; SD= ,56), lezioni on line su biografie di scenziati italiani (M_{spesso}= 3,64; SD= ,49 // $M_{ogni\ tanto}$= 3,58; SD= ,77), lavori di gruppo (M_{spesso}= 3,88; SD= ,70 // $M_{ogni\ tanto}$= 3,78; SD= 1,36), lo studio del bel canto e dell'opera nell'Ottocento romantico italiano in lingua originale (M_{spesso}= 3,52; SD= ,72 // $M_{ogni\ tanto}$= 3,68; SD= ,89).

Sono, invece, di un parere neutrale sulla necessità di inglobare contenuti di medicina, sull'utilizzo di materiali adattati dal docente di altre materie insieme al docente di lingua straniera e sul fatto che una L2 si impara oltre che con l'insegnante di lingua anche con docenti di altre materie scolastiche. Indecisi pure

sull'affermazione che fare ricerche attraverso i siti internet non promuove un particolare studio integrato da parte degli studenti.

TABELLA 3. Analisi della varianza (ANOVA) sui contenuti per età

Età	*media*	*SD*	*F*	*df*	*p*
< di 25 anni	-	-			
da 25 a 35	57,40	5,46			
da 36 a 45	58,53	5,07	,16	3	,93
da 46 a 55	58,75	2,49			
> di 55anni	58,71	6,24			

TABELLA 4: Analisi della varianza (ANOVA) sui contenuti per anzianità di lavoro

Anni di servizio	*media*	*SD*	*F*	*df*	*p*
< di 5 anni	58,12	5,74			
da 6 a 15	59,00	4,17			
da 16 a 25	58,00	5,24	,29	4	,88
da 26 a 35	57,00	2,68			
> di 35anni	60,33	8,50			

Nell'analisi ANOVA sull'insegnamento integrato dei contenuti non si è riscontrata nessuna significatività tra i risultati riguardanti l'età (F= ,16; df= 3; p= ,93) e neppure l'anzianità lavorativa (F= ,29; df= 4; p= ,88). Se riprendiamo le percentuali assegnate alla scala Likert, notiamo che tutti i soggetti, indipendentemente dall'età, hanno dimostrato di essere *d'accordo* sull'importanza di un apprendimento che mette in relazione il contenuto, la lingua e la loro integrazione (73%). Riguardo gli anni di servizio c'è una minima differenza tra i gruppi, che varia dal 71% del gruppo 26-35, seguito dal 73% dei gruppi < di 5 e 16-25, il 74% del gruppo 26-35 e il 75% del gruppo con > di 35 anni di servizio.

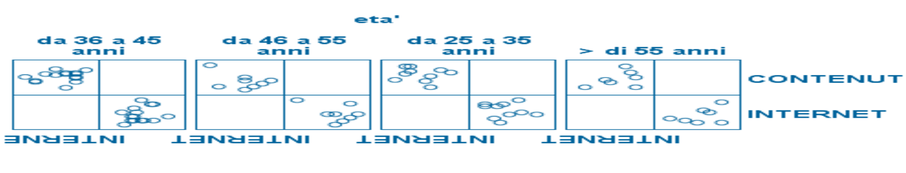


GRAFICO 1: Dispersione delle medie dei risultati in base all'età dei soggetti

Da quanto riportato possiamo concludere che la nostra seconda ipotesi è stata solo parzialmente confermata dato che tra i soggetti non c'è una differenza negli atteggiamenti verso l'insegnamento integrato della lingua con contenuti di altre materie del curricolo visto che tutti lo ritengono valido.

Le risposte dei soggetti di oltre 55 anni d'età sono molto dispersive sia per quanto riguarda i contenuti che l'uso di internet. Non si può dire molto diversamente per il gruppo 46- 55 anni: queste risposte hanno però un valore piuttosto negativo (piuttosto in disaccordo con la tendenza di integrare i contenuti nell'insegnamento della L2). Il gruppo con una visione maggiormente integrata riguardo le due variabili è quello 36-45, con la differenza che per i contenuti si allinea verso valori positivi, mentre per l'uso di internet si coalizza verso i livelli negativi. Un atteggiamento relativamente simile si riscontra tra i gli insegnanti della fascia 25-35 con la differenza che i valori sono piuttosto raggruppati verso i valori più alti della scala Likert per ambedue le varianti trattate.



GRAFICO 2: Dispersione delle medie dei risultati in base all'anzianità di servizio dei soggetti

I migliori risultati per l'anzianità di servizio sia per quanto riguarda i contenuti che l'uso di internet, sono stati riscontrati tra coloro che hanno un'anzianità tra i 26-35 anni, e quelli con meno di 5 anni. Segue la fascia 16-25 con valori medi (*né d'accordo né in disaccordo*) rivolti verso l'alto (*assolutamente d'accordo*). I risultati più dispersivi sono quelli della fascia 6-15 anni di servizio e sopra i 35 anni.

Nell'analisi della correlazione di Pearson sono state riscontrate delle correlazioni significative tra alcuni item (Tabella 5). I soggetti che vedono internet

come mezzo per socializzare (r= -,41; p= ,01), ossia per svolgere attività del tempo libero (r= -,43; p= ,01) non ritengono importante inglobare i contenuti di medicina nell'insegnamento della L2 e neppure fare ricerche in internet ($r_{socializzare}$= -,32; p= ,05) ($r_{attività\ del\ tempo\ libero}$= -,35; p= ,03).

TABELLA 5. Correlazione di Pearson (r) sull'uso dell'internet (V_1) ed i contenuti studiati in lingua veicolare (V_2)

V_2 \ V_1	*reperire informazioni*	*socializzare*	*attività del tempo libero*	*scopi formativi*	*insegnamento della lingua straniera*	*corretta condivisione della conoscenza*	*TOTALE*
medicina	-,19	-,41**	-,43**	-,21	-,12	-,39*	-,32*
arte	,10	,01	-,11	,28	-,27	-,32*	-,09
politica ed economia	-,03	,02	-,17	,15	,00	-,27	-,08
storia	-,08	-,02	-,28	,18	-,10	-,12	-,13
altre discipline	-,15	-,16	-,26	-,03	,10	,18	-,11
altre materie di pubblico interesse	-,26	-,18	-,08	-,43**	,02	,12	-,26
docente di altre materie + docente di lingua	,31	,24	,02	,26	,09	-,23	,21
docenti di altre materie	-,12	-,06	,16	-,05	-,24	-,04	-,10
progetto	,14	,18	,30	,04	,30	-,05	,29
ricerche in internet	-,10	-,32*	-,35*	-,25	-,12	-,11	-,38*
e-learning su biografie	-,19	-,27	-,05	-,03	,04	,14	-,11
lavori di gruppo	-,09	,09	-,15	-,05	,08	,50**	,09
opera dell'Ottocento italiano	,19	,04	,09	,06	-,11	-,18	,03
scultura e architettura fiorentina del '400 e '500	,17	,20	-,04	,27	,18	-,19	,19
tradizione culinaria	,13	-02	-,13	,20	,06	,11	,10
situazione attuale della scuola e dell'educazione	-,15	,10	,27	,22	-,04	-,15	,10
TOTALE	-,07	-,11	-,25	,07	-,04	-,01	-,13

Coloro che utilizzano i social network per favorire una corretta condivisione delle conoscenze, oltre a ritenere non importante studiare nozioni sulla medicina (r= -

,39; p= ,01), ritengono poco importanti anche i contenuti di arte (r= -,32; p= ,04). Inoltre, gli insegnanti che condividono il parere sull'utilizzo abituale di social network per scopi informativi (es. compiti di apprendimento) tra i loro alunni ritengono che i contenuti veicolati durante l'ora di L2 non devono trattare necessariamente varie altre materie di pubblico interesse (r= -,43; p= ,01). Un dato interessante ed altamente significativo lo troviamo tra gli insegnanti che appoggiano l'uso dei social network per favorire una corretta condivisione della conoscenza (V_1) che è direttamente proporzionale con lo studio integrato della L2 attraverso lavori di gruppo e progetti su internet (r= ,50; p= ,00).

5. RIFLESSIONI CONCLUSIVE

Il metodo CLIL implica principalmente una fusione innovativa di due forme di insegnamento: l'insegnamento delle lingue straniere e delle materie «non linguistiche». È un approccio educativo nuovo che implica un ripensamento delle scelte metodologiche, didattiche e della strutturazione e organizzazione della classe, compreso l'uso di internet. Insegnare nell'ottica CLIL, integrando contenuti e lingua, implica un diverso modo di somministrare l'insegnamento, di concepire il ruolo dell'insegnante e dello studente al fine di stimolare i discenti a un apprendimento più consapevole e responsabile. La prospettiva costruttivista vede la figura del docente come guida, tutor e supporto allo studio linguistico (Sabatino, 2017). Tale processo di apprendimento attivo permette agli alunni di sviluppare anche altre competenze estremamente necessarie per una formazione completa della persona, in primis imparare ad imparare e assumere corrette competenze sociali e civiche (Il quadro di riferimento delinea otto competenze chiave considerate ugualmente importanti: comunicazione nella madrelingua, comunicazione nelle lingue straniere, competenza matematica e competenze di base in scienza e tecnologia, competenza digitale, imparare a imparare, competenze sociali e civiche, spirito di iniziativa e imprenditorialità e consapevolezza ed espressione culturale (Gazzetta ufficiale dell'Unione europea, L394/10). La ricerca rivela che l'uso sporadico (*ogni tanto*) o frequente (*spesso*) di internet da parte degli insegnanti non influisce sulla percezione dei soggetti riguardo al modo e allo scopo di utilizzo del mezzo e neppure sui contenuti da inglobare nell'insegnamento integrato della L2. Infatti, ambedue i

gruppi, precisamente il 64% ($M_{ogni\ tanto}$= 19,32; SD= 2,81) e il 61% (M_{spesso}= 18,24; SD= 3,42), ritengono utile l'uso di internet e il 74% ($M_{ogni\ tanto}$= 59,16; SD= 4,75) e il 73% (M_{spesso}= 58,29; SD= 4,75) l'inserimento dei linguaggi settoriali nell'insegnamento della LS in lingua veicolare.

Dalla correlazione dei dati complessivi sull'uso di internet nell'insegnamento della L2 (V_1) e l'inserimento di contenuti di interesse vario presente nell'offerta formativa (V_2), si evince una corrispondenza inversamente proporzionale tra gli utenti di internet e coloro che appoggiano l'utilizzo di un linguaggio specialistico del settore medico (r= -,32; p= ,04). Un'analoga situazione, sempre inversamente proporzionale, si nota anche tra V_1 e V_2 nell'uso specifico di internet per vere e proprie ricerche studio da parte degli studenti (r= -,38; p= ,02).

I risultati dimostrano che gli insegnanti più giovani e con meno anni di servizi prediligono l'uso di internet, il che conferma la nostra prima ipotesi. Abbiamo ipotizzato che gli insegnanti di una fascia intermedia, con esperienza lavorativa considerevole, avrebbero integrato nell'insegnamento della lingua contenuti di altre materie curricolari. La ricerca però non ha confermato appieno che ci sia una corrispondenza tra età e anzianità di lavoro dei soggetti prossimi al pensionamento con l'uso del metodo CLIL. In conclusione, la terza ipotesi possiamo considerarla confermata solo parzialmente, in quel segmento che prevede che gli inseganti più anziani e con tanti anni di servizio non sarebbero stati propensi ad un uso significativo di internet. L'idea che insegnare la L2 significhi fare grammatica non viene confermata, anzi i partecipanti all'inchiesta manifestano un atteggiamento positivo verso l'integrazione di contenuti di varie discipline nell'insegnamento della L2.

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DEVELOPMENT A TRAINING SYSTEM FOR TEACHING THE CALCULATING OF THE INDEFINITE INTEGRAL

Abstract. *The article proposes the training system, developed for improvement of process of teaching the topics of higher mathematics. On the basis integration of methods active and program teaching, the training system of calculation of a indefinite integral is developed.*
Keywords: *computer training, indefinite integral.*

INTRODUCTION

Currently, training systems are successfully used in education. This is specially true of the teaching of higher mathematics at universities [1-2]. The use of digital echnologies in the teaching of higher mathematics is quite an interesting and promising direction. One area of higher mathematics, where a training system can be used successfully, is teaching of calculation of the indefinite integral

Here are some explanations. In calculus, an indefinite integral of a function *f* is a differentiable function *F* whose derivative is equal to the original function f: $F'(x) = f(x)$.

The process of solving for antiderivatives is called indefinite integration, and its opposite operation is called differentiation, which is the process of finding a derivative.

If the function *f(x)* has one primary function, then it will have many primary functions. In particular, if *F(x)* is any primary function of the function *f(x),* then F(x) + C, where C is any constant, also represents the primary function of the function f(x). I.e., if $F'(x) = f(x)$ then $[F(x) + C]' = F'(x) = f(x)$

The sum F(x) + C of any primary function of a given f(x) function and any C constant is called the indefinite integral of the function f(x) and is denoted by:

$$\int f(x)dx = F(x) + C$$

Developed software training system. It realizes formulas for solving indefinite integrals. The corresponding tasks are divided into three levels according to difficulty. There are four tasks in each level. Below are some of the first level tasks:

$$\int e^x dx = e^x + C;$$

$$\int \frac{dx}{x} = \ln|x| + C;$$

$$\int sinxdx = -cosx + C;$$

$$\int cosxdx = sinx + C;$$

Below are some of the second level tasks:

$$\int \frac{dx}{cos^2x} = tgx + C;$$

$$\int \frac{dx}{sin^2x} = -ctgx + C;$$

$$\int a^x dx = \frac{a^x}{lna} + C, a > 0, a \neq 1;$$

$$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha + 1} + C, \alpha \neq -1, \alpha \in R;$$

Below are some of the third level tasks:

$$\int \frac{dx}{xlnx} = \ln\ |lnx| + C;$$

$$\int \frac{dx}{\sqrt{1 - x^2}} = arcsinx + C;$$

$$\int \frac{dx}{1 - x^2} = \frac{1}{2} ln \left|\frac{1 + x}{1 - x}\right| + C;$$

$$\int \frac{dx}{1 + x^2} = arctgx + C;$$

The first window of the developed software training system is shown in Fig.1. At the first level the student is given four tasks to solve. To move to the next level, he must solve any three. The number of tasks at each level and the number of tasks required to move to the next level can vary and is pre-determined by the lead

professor of the course. The computer uses a random number generator to select tasks that appear on the screen.

The student chooses one of the tasks, solves it and enters the result of the calculation in the "Result" field of this task. To check the correctness of this result, he clicks the "Check" button. If the answer is correct, the corresponding message and, the number of correctly solved tasks will appear on the screen and the student will start solving another task. If the answer is incorrect, then the corresponding message will appear on the screen. In this case, the student can re-solve this task, or start solving another task and then go back to solving this task again. To see the correct answer, the student presses the "Calculate" button.

The software training system counts the number of correctly solved tasks, and as soon as it equals the predefined number needed to move to the next level, the "Next Level" button is activated. Clicking on it opens the next level window, which displays the tasks corresponding to that level.

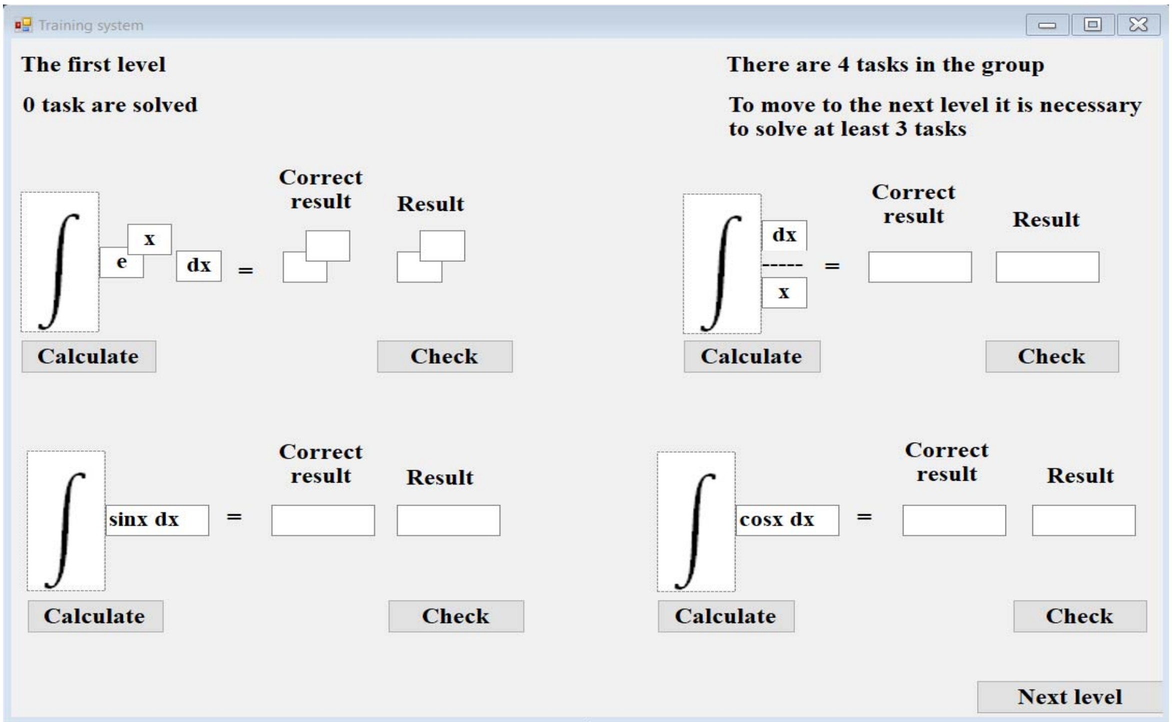


Fig. 1. The first window of the software training system

The learning process ends when the student solves the required number of final level tasks. In this case, it will be considered that he has mastered the issues to be studied well. At each level of difficulty the student can change the settings of any task and re-solve it, if desired he can solve all the tasks.

The first window of the software training system is shown in Fig. 1.Thus, according to the methodology proposed in the article, the set of tasks is divided into levels according to difficulty. After solving a certain number of tasks in each level, the student moves to the next level of difficulty and begins to solve tasks of the corresponding level. This continues until the student solves the appropriate number of tasks for the last level. The software training offered in the article will enable students with different skills to maximize their potential and abilities in the process of integral study. This, in turn, refines and perfects the process of teaching higher mathematics.

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SOCIOLOGY AND POLITICAL SCIENCE

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EUROPEAN SECURITY. SOUTHEAST FLANK OF NATO – PROBLEMS AND SOLUTIONS

Abstract. *Europe's security is analyzed, with a main emphasis placed on the Alliance's southeastern flank, in particular the Balkans and the Black Sea region, while the main researched sources of destabilization are the activities of the Russian Federation, China, internal challenges and those caused by the complex and dynamic situation in the Middle East and North Africa. The recommendations for improving NATO security and capacity are made in the context of the comprehensiveness of these risks and the objective limited possibility and capacity of individual countries to deal with them independently.*

Keywords: *NATO, EU, Russia, China, terrorism, radicalization, hybrid threats, Balkans, Black Sea region*

Due to the high level of interconnectedness and globalization, emerging challenges demonstrate the need for integrated approaches to security threats. Particular attention should be paid to: asymmetric threats, Russia's nuclear weapons policy and pressure, China's financial war, the prevention and counteracting terrorism, radicalization and organized crime, the security of the Alliance's southeast flank, with a focus on the Balkans and the Black Sea region, as well as the need for enhanced cooperation between the EU and NATO. Individual countries do not have the capacity to tackle most of the challenges of the 21st century on their own – from organized crime to nuclear threats, from pandemics to financial crises, from terrorism to conventional wars, a multilateral approach and cooperation is needed. It needs to be emphasized that the above-mentioned threats on a global level also apply to Europe, especially terrorism and radicalization. At the same time, the Old Continent and the EU face another "old" new threat – that of the interests and ambitions of the Russian Federation; if the threat of nuclear war has always been on the agenda since this type of weapon even existed, that of conventional clashes with Russia seemed greatly exaggerated until a decade ago. At the beginning of the 21st century, optimism reigned in the Western world. In the 1990s, the Soviet Union disintegrated relatively peacefully, and Moscow seemed ready to cooperate with the West, including NATO [16]. However, this policy has changed dramatically in recent years.

Some countries of the former Eastern bloc managed to join the desired organizations and alliances in the face of the EU and NATO, others were punished for these desires and intentions. At the beginning of the 21st century, it seemed that there were no geographical borders for EU enlargement, but today it can be seen that it is most noticeable in the Black Sea region. NATO and Europe are once again facing Russia's unscrupulousness and ambitions for expansion. This, of course, was quite difficult to predict after the end of the Cold War, when a weakened and indebted Kremlin needed new markets and allies and could only find them in the West. At the same time, rising gas and oil prices in the 2000s and the opportunistic new president made Russia more proactive, unwilling to cooperate, and disinterested in "liberalizing" on a Western model [16].

The policies pursued by Moscow show that the understanding of the international system, the only way to make politics is through interaction with strong countries, while the smaller and weaker ones are used as a kind of bargaining chips or pawns in the competition between the so-called Great powers. This is the key difference in the way the EU and Russia understand Europe and the Black Sea region, as well as the world at large. Brussels sees it as a region where, together with its current members, opportunities for cooperation are hidden, and Russia, for its part, sees it as its own zone and does not allow intruders. At the same time, the international system is shaped mainly by the way in which states perceive and interpret their actions. In this uncertain environment, the wrong assumption can be very dangerous and even disastrous for the state, which is why countries tend to be somewhat skeptical and pessimistic and because of that their plans and strategies are almost always based on the worst-case scenarios. Therefore, in order to understand correctly how Russia sees international politics, it is necessary to do so through the prism of realism. This is required because, obviously, it is the way Moscow views and understands global development. It is therefore important to rely on realism in international relations.

Realism is undoubtedly the dominant theory in international relations in the 20th century, and its roots can be traced back to the works of Thucydides from the 4th century BC. One of the key concepts in realism is that the international system is

anarchic. At the same time, it is extremely important to highlight that this does not mean that it is chaotic or driven by some disorder. The concept of “anarchy” must, in fact, be understood in itself as a kind of order that presupposes that the international system consists of independent political units, states that do not have a form of centralized power over themselves [12]. Alexander Wend even defines anarchy as the derivative result of the countries themselves [19] and the inevitable result of this is the so-called security dilemma, another basis of realism.

The concept of such a dilemma was first introduced in 1950 by John Hertz in “Idealist Internationalism and the Security Dilemma.” According to Hertz, the dilemma stems from the dualistic nature of human social life, which is characterized by fear and dependence. Hertz bases his hypothesis on the theory that people overcome their personal insecurities by forming groups, which leads to the idea of collective security. However, as groups act in a similar way, mistrust and insecurity begin to escalate. These problems force individual groups to build and develop defense and military capabilities in pursuit of security [8]. However, this persecution can easily be seen as preparation for hostile action by other groups, especially if there is no trust and dialogue.

When considering the security dilemma in the Black Sea, it must be borne in mind that Russia's interests in the region are not a historical precedent. The Black Sea has historically been of great importance to the Kremlin since the 18th century. Kyuchuk Kaynardzha's treaty of 1774 not only ended the 6-year war between the Russian and Ottoman empires, but also provided Moscow with direct access to the Black Sea. In addition, tsarist Russia was given control of the Crimean Khanate. Despite regional dissatisfaction with Moscow's rule, the peninsula was annexed in 1783 and Russia established itself as the dominant naval power. At the same time, the decline of the Ottoman Empire fueled Russia's ambition to control the Bosphorus and the Dardanelles, a strategic goal that has been a driving force in Russian foreign policy for most of the 20th century [21]. At the same time, it is worth emphasizing that among the main reasons for Athens and Ankara to join NATO is precisely Moscow's insistent position to deploy a military base in Turkey, as well as to revise the 1936 Montreux Treaty [16].

After the collapse of the Soviet Union, the Black Sea has shrunk significantly as strategically important for the West, but not for Russia. During the collapse of the Soviet Union, Crimea had about 100,000 Russian personnel, 60,000 troops and 835 ships, and the port of Sevastopol retained its key position for Russian interests in the Black Sea [18]. For their part, neither NATO nor the EU attach special strategic importance to the region, despite the open ambition of almost all countries to associate with Western organizations, which is why a number of them held the so-called color revolutions. At the same time, although the Kremlin no longer has “direct” control over states, the actual and potential enlargements of the EU and NATO have never been seen as anything other than an existential threat to Russia. Therefore, in retrospect, all of Russia's activities in Ukraine, Georgia, subversive activities in the Balkans and Eastern Europe, and the entire Western world are the result of this unchanged worldview and strategy aimed at minimizing the preservation of zones of influence [16].

It is also appropriate to pay attention to how Russia has managed to mislead the West in its readiness to liberalize and pursue its goals, while remaining under the attention of NATO and the EU. What the country and its governing system represent today is the result of a consistent policy initiated in the mid-1990s, when a group consisting of Gleb Pavlovski, Modest Kolerov, Sergei Markov, Vyacheslav Nikonov and Vladislav Surkov launched Project “Heir” [11], their goal being to identify the leader after Boris Yeltsin. The result of this initiative is the current President Vladimir Putin, who has been given the power and opportunity to establish and, if necessary, revise the country's internal rules and policies, as well as its international strategy. The main goals were almost certainly the restoration of control over the economy and society, but without losing the facade of liberalism. Thus, by establishing a type of “sovereign democracy”, President Putin has succeeded not only in simulating political pluralism, but also in imitating Russia's acceptance of globalization, as well as selectively enforcing legislation to serve those close to him [21]. This allowed Vladimir Putin to hide Russia's ambitions and goals from the West.

In this way, the EU not only failed to help form a democratic and liberal post-communist Russia, but Moscow has a huge influence on the Union. The Kremlin is taking the opportunity to sign long-term bilateral agreements with member states, thus undermining the Union's basic principles. It was not until December 2014 that Brussels was able to take a unified position on such policies with the abolition of South Stream [9]. At the same time, however, in the Caucasus and Central Asia, Moscow's efforts effectively excluded the EU and NATO from an area in which it sought to promote political reform, resolve conflicts and forge energy partnerships [11]. With regard to the EU, Moscow seeks to settle not only its treaties bilaterally, but also its disputes with the Member States, thus undermining EU solidarity and synergy and creating opportunities for increasing Russian influence in the region. The approach is to seek rapprochement with influential political and economic leaders of the large Member States, while threats and extortion are applied to the "smaller" ones. This was confirmed by Konstantin Kosachev in an interview with the European Council on Foreign Relations: "We are tired of dealing with bureaucrats in Brussels. In Germany, Italy, France we can achieve much more. The EU is not an institution that contributes to our relations, but an institution that slows down progress" [11]. It is not difficult to see the difference in Russia's approaches to stronger and weaker European countries – while the former Soviet republics and Eastern Europe are under pressure and gas supplies are periodically cut off for alleged technical reasons, other countries are sought out, their influential people and companies being the prime target for lobbying. Russian companies, especially in the energy sector, have built partnerships with corporations such as Gasunie in the Netherlands; GDF and Total in France; ENI in Italy; and BASF and E.ON in Germany [11].

Despite these challenges and the continuing need for improvement and adaptation, NATO has an indispensable contribution to security in Europe and an indisputable deterrent to potential aggressors. At the same time, it must be borne in mind that the Alliance and the EU have 21 common member states, which largely share a shared vision and a synchronized assessment of the risks to the old continent. The Lisbon Summit in 2010 emphasized the need to improve the NATO-EU strategic partnership. The 2010 Strategic Concept commits the Alliance to work more closely

with other international organizations to prevent crises, manage conflicts and stabilize post-conflict situations. Subsequently, in Warsaw in July 2016, the two organizations outlined areas for enhanced cooperation on common challenges east and south, including countering hybrid threats, increasing resilience, capacity building for defense, cyber defense, maritime security and exercises. In December of that year, NATO foreign ministers approved a statement to which 42 common measures to advance NATO-EU co-operation were attached. In December 2017, another 32 measures were agreed. On 10 July 2018, in a joint declaration, the two organizations agreed to focus on military mobility, the fight against terrorism and strengthening the resilience of chemical, biological, radiological and nuclear risks, as well as the promotion of women and a peace and security agenda. This joint declaration was welcomed at the Brussels summit in July 2018 and noted that the development of European defense capabilities, which will also contribute to the security of the Alliance. Close cooperation between NATO and the EU is undoubtedly an important element in developing an international "comprehensive approach" to crisis management and operations that requires the effective deployment of both military and civilian assets.

NATO's southeastern flank, following the annexation of Crimea, has gained significant strategic importance over the past decade. This is due to several factors – Russia's destabilizing actions, China's interest, Turkey's complicated relations with NATO, the EU and the US, the war in Syria and the overall situation in the Middle East and North Africa, which led to a wave of refugees to Europe, which in turn significantly increased the dangers of terrorism, radicalization and foreign fighters [15]. In the Balkans, the EU, in co-operation with NATO, has a leading role to play in stabilizing the southeastern flank of the two alliances. In the late 1990s and the first five years of the new millennium, the role of international players in the Balkans was enormous, after which the regional ownership approach was adopted, reflecting their changing role [10]. This in itself highlights the fact that the importance of a particular international player in a certain country or region is not a constant. Because this meaning is determined rather by the context of the day or more precisely – by the immediate challenges.

The EU is undoubtedly the most influential factor in the region due to the fact that membership offers the opportunity for financial and economic prosperity, political development and shared solidarity. Membership is Brussels' most powerful tool for influencing both individual countries and the region. At the same time, however, at least in the short term, ambitions for EU enlargement will remain stagnant, which in turn will almost certainly slow down or even halt reforms in a number of countries, especially in the Balkans [5]. The influence of several factors can be noticed in the delay of this process. Some of them are related to processes internal to the European Union – for example, the ongoing identity crisis, i.e. whether the EU is a supranational state, whether it is just a single market or a federation, or whether it is actually something else. All this, together with the fact that the EU has always had difficulties in making common decisions, has led to the first signs of renationalisation. Moreover, the financial and economic problems of the EU, as well as Brexit, have not contributed anything positive to changing this situation. And if we add the internal challenges to the accession of the Balkan states themselves, the prospects for further EU enlargement are beginning to look even bleaker, which objectively weakens NATO's entire southeastern flank [7].

Nevertheless, as well as the membership, when we talk about tackling the challenges of radicalization, terrorism and the migration crisis in the Balkans, we must emphasize that it is the EU that has the greatest potential and opportunities to tackle these challenges, as well as the threats arising from them. This is particularly important, given the fact that the Balkans are, in fact, the ones who are experiencing the worst consequences of the migrant crisis. The countries of the region are facing not only the financial, economic and political consequences of this crisis, but also the deterioration or even aggravation of interstate relations between them. It is therefore crucial that this region urges the EU to find a comprehensive approach that prevents the Balkans from encapsulating and becoming a buffer zone between Europe and the sources of migration, which will be detrimental not only to the region, but also potentially to the EU. It is also crucial that Brussels takes the lead in the context of the challenges facing European countries, especially the Balkan countries. It is appropriate to see the migration crisis as a long-term problem for the whole of

Europe, which is why it is important that the decision comes on the basis of European policies shared by all Member States and supported by non-EU Balkan countries. At the same time, it must be borne in mind that no country in the region has the capacity, individually and independently, to fully address these challenges. A good example of a “shared policy” was the creation of the European Border and Coast Guard Service Frontex, whose task is to control and, if possible, reduce the “volume” of migrant flows coming to Europe [15].

Regardless, stopping these flows only at the borders cannot be assessed as a complete and sustainable solution to the problem. In the first place, it is impossible to reduce the number of migrants to zero, because some of them can always find a reason or a way to enter the EU illegally. Secondly, their mere stopping at the borders does not solve the issue of the migrant crisis, because many have already entered Europe, and their number – sooner or later – will continue to increase [1]. It is therefore essential that the EU (re)distributes migrants on a quota basis in all Member States, while monitoring and controlling this process in order to prevent any “ghettoisation” of migrant communities. At the same time, in order for Brussels to deal with this crisis effectively in the long term, it must ensure the successful integration of these migrants [15].

In relation to the radicalization of foreign fighters, there are reliable data that the largest number of such fighters per capita, fighting on the side of the so-called Islamic State (IS) is actually from the Balkans [1]. It is essential to properly analyze and understand the factors that led these people to join such groups. These factors can be both economic and social, but can also include the radicalization of Islam and then the Islamization of the radicalized. All EU member states are secular countries because religion is separate from politics. However, this also led to a situation in which no attention was paid to what the imams preached, which in turn enabled these imams to preach radical forms of Islam, as well as to hire fighters on behalf of the so-called IS and other groups. Individual countries need to work with Muslim communities to prevent radicalization. And yet there are people who, looking to vent their extremism, decide that it is much more convenient to use Islam only as a “franchise” so that they can attract more attention to their activities [2].

At the same time, as a result of the achievements of the international coalition against the so-called ID-led by the United States, some foreign fighters can be expected to return to their homelands. This raises the question of how to deal with these fighters – whether to be placed in isolation and/or surveillance, enrolled in deradicalization and reintegration programs, or even expelled. Undoubtedly, some of them will return traumatized by what they have seen, but they may also realize what they have done. At the same time, however, there will be those who will try to continue the struggle on European territory. All this can only be resolved on the basis of cooperation not only with the European Union, but also with the United States and NATO. Through the exchange of information and good practices, not only the problems of radicalization and the fight against terrorism can be solved, but also other similar problems such as organized crime and human trafficking [15].

It is worth noting that NATO's importance to the Balkans is no less important than that of the EU, as the Alliance continues to ensure stability on the basis of membership or partnership [20]. In parallel, it has already been demonstrated that the two organizations can support each other with ever-increasing levels of cooperation, as evidenced by Operation “Marine Guard” in the Mediterranean, in addition to the Alliance's other tasks of supporting EU’s Operation “Sofia” in the fight against human trafficking. At the same time, the two organizations will almost certainly make a significant contribution to enhancing intelligence sharing, and even potentially efforts can be made to create a single database for groups, organized crime groups and even radicalized individuals. Beyond the EU and NATO, it is appropriate to intensify bilateral relations with the United States, which for the last twenty years has been the country with the richest experience in the fight against terrorism and radicalization. For its part, as the strategic importance of the Black Sea region grows, the stability of the Balkans is essential to Washington's interests.

However, the influential factor that has no interest in stable and pro-Western Balkans is Russia. Therefore, when analyzing Moscow's role and influence in this region, it should be done in the context of the Kremlin's desire to restore its position as a great power [13]. Similar aspirations by Russia are observed in the Black Sea region, the Middle East and the Balkans, and since all Balkan countries have already

declared their intentions for membership in the European Union or NATO (or both organizations), such behavior by Moscow should is considered destructive [3]. To strengthen its influence in the Balkans, Moscow uses methods of: – hybrid warfare, various media, and strategic communication, with an emphasis on common Slavic roots and common religion, with Russia's dominant role in the energy market also used with a “Clausewitz” goal. Moscow can directly challenge the influence of the EU and NATO in non-EU countries. In EU member states, however, the Kremlin is using the same methods and means, creating tensions that could lead to the election of anti-Western and pro-Russian governments in those countries, which in turn could begin to challenge the unity of the European Union and NATO [14]. In addition, these actions could lead to the lifting of financial sanctions against Russia [6]. At the same time, the formation of paramilitary structures is a relatively new and disturbing circumstance within the Russian approach to the Balkans. Participants in such entities most often have the skills to use firearms, and are most likely to have "self-organized" to protect their religion, traditions and Slavic culture not only from migrants, but also from the influence of “already eroded” West [17]. This is a completely new challenge, which is a product of Russia's persistent policy in this region. And as such, this challenge must not only be monitored and controlled, but also overcome. Such organizations already exist in Bulgaria, Serbia and Montenegro. Russia is benefiting from the ongoing crisis in the Balkans, Europe and the EU; and any challenge currently facing the Balkans is a welcome opportunity for the Kremlin [3].

At the same time, the role of Turkey, one of the most influential factors in the Balkans and the Black Sea, should not be overlooked. While on the one hand this country is part of the region, on the other hand the impact and influence of Turkey goes beyond the borders of this region. From a purely geographical point of view, Turkey is part of the migrant route to Europe, which in turn assigns it an important role in controlling migrant flows to the European continent. That is why it is extremely important for both the Balkan countries and the EU to maintain a constructive dialogue with Ankara. Nevertheless, two main issues remain, in which there is no certainty as to how they will develop in the medium term or what their

impact will be. First, because Turkey has been a member of NATO and has been fighting hard to join the EU for almost two decades, and its relations with Moscow have the potential to fundamentally change the political environment in the Balkans [10]. As it has been pointed out several times, Russia is using a complex approach to influence the Balkans. With the Turkish Stream, as well as the renewed friendship between Erdogan and Putin, there is no certainty as to how this could affect countries in the region. Secondly, there is a deal between Brussels and Ankara to exchange Syrian for non-Syrian refugees, and while the difficulties in doing so are widely discussed in public, Turkey's highly possible future difficulties are left out. It is extremely difficult for Ankara to monitor the whereabouts and condition of some 3 million refugees on its territory. In addition, Turkey has a real problem integrating them, as many of them refuse to learn Turkish or send their children to school. It should also be highlighted that even if the EU-Turkey deal proves successful in the short term, it is not a solution to the problem, as it will neither stabilize the sources of migration, nor guarantee the successful integration of migrants, nor prevent radicalization or terrorism [15].

China, for its part, is not directly linked to threats of radicalization, terrorism or the migration crisis, but it is appropriate to follow Beijing's interests and ambitions in the Balkans, as they will almost certainly only increase, and as analyzed, they may be malicious [10]. Although China is most often seen as an emerging player in the region, Beijing has maintained close relations with some of the Balkan countries since 1978. In addition, since the beginning of the new century, the country's rapidly growing economy and aspirations have strengthened its importance in the region. Beijing's role is largely economic, as China seeks to invest in joint ventures and enterprises that Western companies most often view as risky. Such companies include mainly energy projects, infrastructure, machinery and equipment, rail and sea transport. In addition, for such projects, some Chinese banks offer loans with almost symbolic interest rates, which makes such projects extremely attractive for joint work [15].

The Balkans are important to China for three main reasons: first, the region offers new markets with decent potential; secondly, if Beijing realizes its ambitions to

restore a strong presence on the Silk Road in the Balkans, it will be able to secure a dominant role in the region; third, there is no vacuum in either physics or international relations – as the integration of the Western Balkans into the EU has been delayed, it is only logical that other players should take advantage of this opportunity. If Beijing manages to strengthen its presence and role, it will be able to gain influence over Brussels during possible future negotiations, which in turn will strengthen China's position as a global power – something that Beijing has been fighting hard for and openly for the last several decades [15].

The Balkans are of strategic and geopolitical importance to international players and key to security and stability not only for the southeastern flank, but also for NATO and the EU as a whole. For organizations and their allies, stability in the region is important, while others are mostly attracted by the potential for instability. Given the current challenges – radicalization, terrorism and the migrant crisis – the Balkan countries must not allow themselves to be encapsulated in order to become a buffer zone between the EU, the Middle East and Russia. Together, they must express their concerns openly, expressing their views, but at the same time continuing to support EU and NATO policies. The Balkan countries must unite around the idea of joining the EU and pursue this idea together. This is especially important at a time when nationalist and populist ideas are becoming more widespread. Nationalism dominated the Balkans in the 1990s and the results were disastrous for a number of countries; it is difficult to imagine that anything better can be offered today. As a result, optimal coordination and cooperation between the EU and NATO is needed, but also a high degree of regional initiative and collaboration, especially in order to counter Russian attempts at destabilization, the situation in the Middle East and North Africa and the resulting threats, dubious Chinese loans and investment, as well as radicalization. It may be considered appropriate to strengthen NATO's military presence in member countries, especially those with access to the Black Sea, which would have the potential to discourage provocative actions by Moscow, as well as to show readiness and determination. In order to improve the overall security situation, it will be beneficial to strengthen the exchange of information and good practices in the EU and NATO, including the potential creation of common databases for terrorist

organizations, radicalized persons, suspicious financial flows, as well as a list of companies and individuals who have been proven to use their capital to invest in suspicious projects.

NATO faces increasing and overarching challenges, both external and internal, that require innovation and adaptability. Addressing and overcoming them requires optimal levels of cooperation, both within the Union and with the EU. This article presents and analyzes only some of these threats. For a more in-depth study of the topic, it will be appropriate to take into account: the relationship between Russia and Belarus and the likelihood of permanent deployment of Russian armed forces in the country; the role of Moscow and Ankara in the conflict between Armenia and Azerbaijan; Russia's subversive activities in Europe through energy projects; the activities of Russian private military companies such as Wagner in the Middle East and Africa; the country's policies and actions in countries such as Syria and Libya; its influence in Central Asia and the deployment of S-300 systems in Kyrgyzstan and Tajikistan, which allows monitoring of the NATO mission in Afghanistan; relations between Moscow and Beijing; China's investments in NATO and EU member states; Chinese state-owned companies that use Western funds to finance military technology; China's influence in South Asia; as well as the situation on the Korean Peninsula.

A significant part of these proposed prima vista themes and challenges does not imply that the competence of the North Atlantic Alliance is necessary. However, each of them has the potential, indirectly or directly, to become a destabilizing factor for NATO. This, in turn, requires an increase in the Alliance's expertise, but also the need for coordination, cooperation and even possible coherence on a number of policies with the EU. But only by continuing to maintain its educational strength, technological superiority, innovative approach, levels of cooperation and exchange of good practice and experience, timely and coherent action and operations, and to remain an appealing force for democracies around the world, will NATO succeed to legitimize not only its power but also its very existence.

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